Micro Mechanical Valve
Series VM1000

RoHS

Miniature stucture requires little mounting space.

Built-in hose nipple connection.

Piping options:
Side piping, Bottom piping

Over Travel after actuation (mechanical operated types)

Standard Specifications

Valve type			N.C. poppet		
Number of ports			2 or 3		
Piping			Side or bottom ported		
Fluid			Air/Inert gas		
Operating pressure			0 to 0.8 MPa		
Ambient and fluid temperature			–5 to 60°C (No freezing)		
Flow characteristics			C[dm³/(s·bar)]	b	Cv
	Side ported	1(P)→2(A)	0.2	0.15	0.05
		2(A)→3(R)	0.2	0.15	0.05
	Bottom ported	1(P)→2(A)	0.2	0.25	0.05
		2(A)→3(R)	0.2	0.15	0.05
Lubrication			Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Fitting			With hose nipple		

Semi-standard Specification

Total travel (T.T.)	2.5 mm (Basic)
• T.T. 2.5 mm is available for basic style only.	

Model

	Actuator	Piping	Number of ports	Applicable tubing		Note	Weight (g)
				T0425	TU0425/T0403		
Mechanical operation	Basic	Side ported	3 port	VM1000-4N-00	VM1000-4NU-00	—	6
			2 port	VM1100-4N-00	VM1100-4NU-00	—	
		Bottom ported	3 port	VM1010-4N-00	VM1010-4NU-00	—	
			2 port	VM1110-4N-00	VM1110-4NU-00	—	
	Roller lever	Side ported	3 port	VM1000-4N-01	VM1000-4NU-01	—	11
			2 port	VM1100-4N-01	VM1100-4NU-01	—	
		Bottom ported	3 port	VM1010-4N-01	VM1010-4NU-01	—	
			2 port	VM1110-4N-01	VM1110-4NU-01	—	
	One way roller lever	Side ported	3 port	VM1000-4N-02	VM1000-4NU-02	—	12
			2 port	VM1100-4N-02	VM1100-4NU-02	—	
		Bottom ported	3 port	VM1010-4N-02	VM1010-4NU-02	—	
			2 port	VM1110-4N-02	VM1110-4NU-02	—	
Manual operation	Toggle lever	Side ported	3 port	VM1000-4N-08	VM1000-4NU-08	—	20
			2 port	VM1100-4N-08	VM1100-4NU-08	—	
		Bottom ported	3 port	VM1010-4N-08	VM1010-4NU-08	—	
			2 port	VM1110-4N-08	VM1110-4NU-08	—	
	Push button	Side ported	3 port	VM1000-4N-32R	VM1000-4NU-32R	Red	31
			2 port	VM1100-4N-32R	VM1100-4NU-32R	Red	
		Bottom ported	3 port	VM1010-4N-32R	VM1010-4NU-32R	Red	
			2 port	VM1110-4N-32R	VM1110-4NU-32R	Red	
		Side ported	3 port	VM1000-4N-32B	VM1000-4NU-32B	Black	
			2 port	VM1100-4N-32B	VM1100-4NU-32B	Black	
		Bottom ported	3 port	VM1010-4N-32B	VM1010-4NU-32B	Black	
			2 port	VM1110-4N-32B	VM1110-4NU-32B	Black	
		Side ported	3 port	VM1000-4N-32G	VM1000-4NU-32G	Green	
			2 port	VM1100-4N-32G	VM1100-4NU-32G	Green	
		Bottom ported	3 port	VM1010-4N-32G	VM1010-4NU-32G	Green	
			2 port	VM1110-4N-32G	VM1110-4NU-32G	Green	

Note) To replace the push button and push button cover alone, refer to page 2348.
Other parts and actuator cannot be replaced.

How to Order

VM1 [0] [0] [0] – [4N] – [00] [R]

Number of ports

0	3 port
1	2 port

Piping

0	Side ported
1	Bottom ported

Total travel/Basic (T.T.)

0	4.8 mm
1	2.5 mm (Option)*

* Basic only.

Applicable tubing (Material/Size)

4N	Nylon ø4/2.5 (T0425)
4NU	Nylon ø4/3 (T0403)
	Soft Nylon ø4/2.5 (TS0425)
	Polyurethane ø4/2.5 (TU0425)

Actuator type

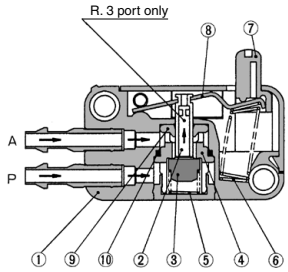
00	Basic
01	Roller lever
02	One way roller lever
08	Toggle lever
32	Push button

Color of push button

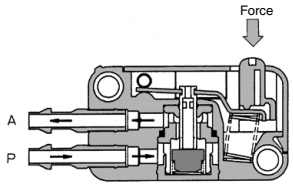
R	Red
G	Green
B	Black

Construction

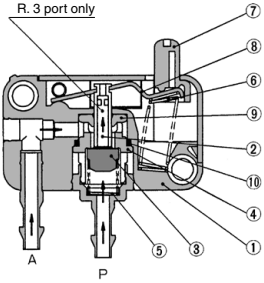
Side ported/Non-actuated



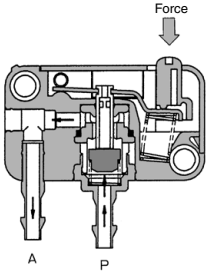
Side ported/Actuated



Bottom ported/Non-actuated



Bottom ported/Actuated



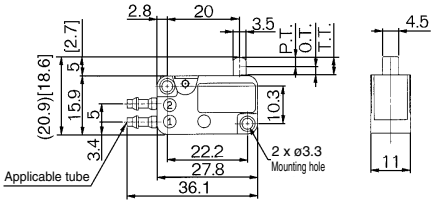
Component Parts

No.	Description	Material	Note
1	**Body**	PBT	
2	**Valve**	POM	
3	**Valve**	NBR	
4	**Retainer**	POM	
5	**Valve return spring**	Stainless steel	

No.	Description	Material	Note
6	**Lever return spring**	Stainless steel	
7	**Plunger**	POM	T.T. = 2.5 mm only, w/threads
8	**Lever**	Stainless steel	
9	**Packing**	NBR	
10	**O-ring**	NBR	

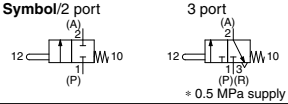
Series VM1000/Side Ported

Basic
VM1000-4N-00
VM1000-4NU-00
VM1100-4N-00
VM1100-4NU-00



[ ]: T.T. = 2.5 mm

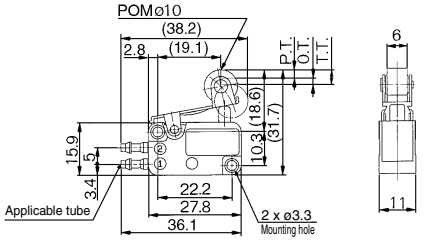
Symbol/2 port 3 port



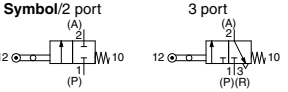
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	**VM1000-4N-00**	**VM1000-4NU-00**
	2 port	**VM1100-4N-00**	**VM1100-4NU-00**
F.O.F. ∗		6 N	
P.T.		2.5mm[2mm]	
O.T.		2.3mm[0.5mm]	
T.T.		4.8mm[2.5mm]	

Roller lever
VM1000-4N-01
VM1000-4NU-01
VM1100-4N-01
VM1100-4NU-01



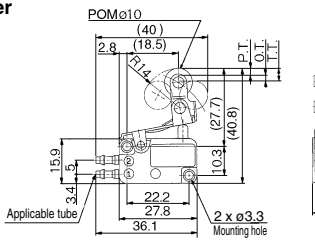
Symbol/2 port 3 port



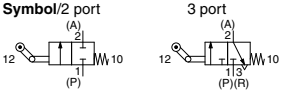
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	**VM1000-4N-01**	**VM1000-4NU-01**
	2 port	**VM1100-4N-01**	**VM1100-4NU-01**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

One way roller lever
VM1000-4N-02
VM1000-4NU-02
VM1100-4N-02
VM1100-4NU-02



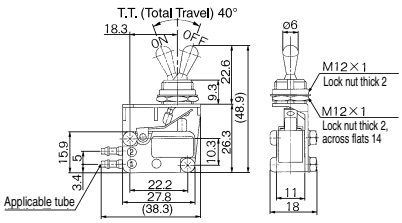
Symbol/2 port 3 port



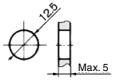
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	**VM1000-4N-02**	**VM1000-4NU-02**
	2 port	**VM1100-4N-02**	**VM1100-4NU-02**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

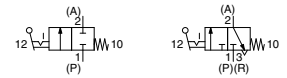
Toggle lever
VM1000-4N-08
VM1000-4NU-08
VM1100-4N-08
VM1100-4NU-08



Panel mounting hole



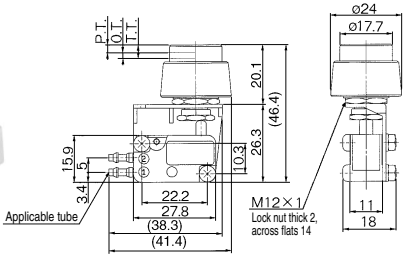
Symbol/2 port 3 port



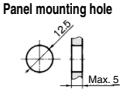
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	**VM1000-4N-08**	**VM1000-4NU-08**
	2 port	**VM1100-4N-08**	**VM1100-4NU-08**
F.O.F. ∗		4N	
P.T.		40°	

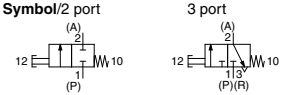
Push button
VM1000-4N-32
VM1000-4NU-32
VM1100-4N-32
VM1100-4NU-32



Panel mounting hole



Symbol/2 port 3 port



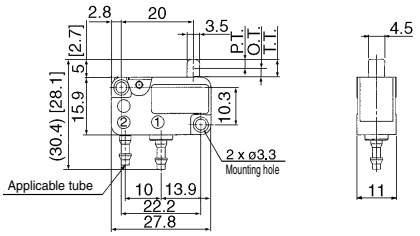
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	**VM1000-4N-32**	**VM1000-4NU-32**
	2 port	**VM1100-4N-32**	**VM1100-4NU-32**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

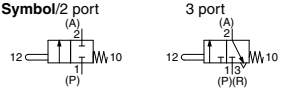
Series VM1000/Bottom Ported

Basic
VM1010-4N-00
VM1010-4NU-00
VM1110-4N-00
VM1110-4NU-00

[ ]: T.T. = 2.5 mm



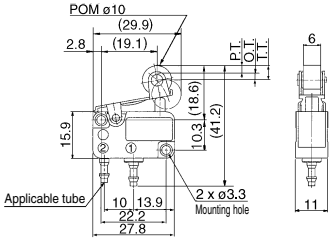
Symbol/2 port 3 port



∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	**VM1010-4N-00**	**VM1010-4NU-00**
	2 port	**VM1110-4N-00**	**VM1110-4NU-00**
F.O.F. ∗		6 N	
P.T.		2.5mm	
O.T.		2.3mm[0.5mm]	
T.T.		4.8mm[2.5mm]	

Roller lever
VM1010-4N-01
VM1010-4NU-01
VM1110-4N-01
VM1110-4NU-01

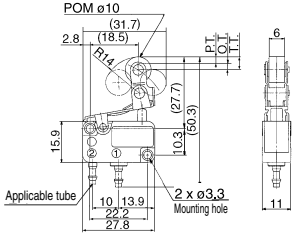


Symbol/2 port 3 port

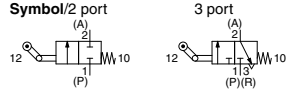
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	**VM1010-4N-01**	**VM1010-4NU-01**
	2 port	**VM1110-4N-01**	**VM1110-4NU-01**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

One way roller lever
VM1010-4N-02
VM1010-4NU-02
VM1110-4N-02
VM1110-4NU-02



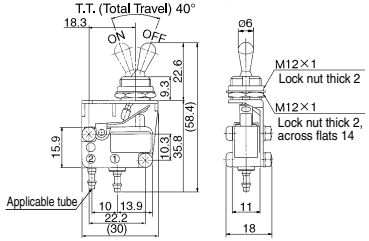
Symbol/2 port 3 port



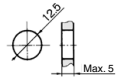
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	**VM1010-4N-02**	**VM1010-4NU-02**
	2 port	**VM1110-4N-02**	**VM1110-4NU-02**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

Toggle lever
M1010-4N-08
VM1010-4NU-08
VM1110-4N-08
VM1110-4NU-08



Panel mounting hole

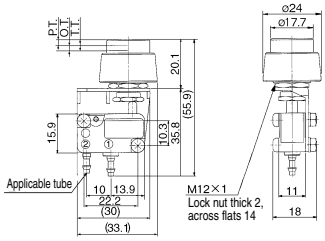


Symbol/2 port 3 port

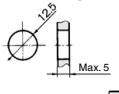
∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	**VM1010-4N-08**	**VM1010-4NU-08**
	2 port	**VM1110-4N-08**	**VM1110-4NU-08**
F.O.F. ∗		4N	
P.T.		40°	

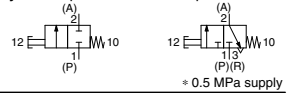
Push button
VM1010-4N-32
VM1010-4NU-32
VM1110-4N-32
VM1110-4NU-32



Panel mounting hole



Symbol/2 port 3 port



∗ 0.5 MPa supply

		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	**VM1010-4N-32**	**VM1010-4NU-32**
	2 port	**VM1110-4N-32**	**VM1110-4NU-32**
F.O.F. ∗		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

2/3 Port Mechanical Valve

Series VM100

RoHS

Compact size.
Piping options:
Side piping, Bottom piping
A variety of actuator types.

Specifications

Piping			Side ported		Bottom ported
Fluid			Air/Inert gas		
Operating pressure			–100 kPa to 1.0 MPa		
Ambient and fluid temperature			–5 to 60°C (No freezing)		
Flow characteristics			C[dm³/(s·bar)]	b	Cv
	Side ported	1(P)→2(A)	0.5	0.2	0.11
		2(A)→3(R)	0.4	0.15	0.10
	Bottom ported	1(P)→2(A)	0.5	0.2	0.11
		2(A)→3(R)	0.4	0.15	0.10
Lubrication			Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size			1/8		M5 x 0.8

Model

		Side ported		Bottom ported		Actuator part no.	Application	Weight (g)	
		2 port	3 port	2 port	3 port			Side ported	Bottom ported
Mechanical operation	Basic	VM120-01-00	VM130-01-00	VM122-M5-00	VM132-M5-00	—	—	95	110
		VM121-01-00	VM131-01-00	VM123-M5-00	VM133-M5-00				
	Roller lever	VM121-01-01	VM131-01-01	VM123-M5-01	VM133-M5-01	—	Polyacetal roller	101	120
		VM121-01-01S	VM131-01-01S	VM123-M5-01S	VM133-M5-01S	—	Hard steel roller	102	121
	One way roller lever	VM121-01-02	VM131-01-02	VM123-M5-02	VM133-M5-02	—	Polyacetal roller	107	120
		VM121-01-02S	VM131-01-02S	VM123-M5-02S	VM133-M5-02S	—	Hard steel roller	117	130
	Straight plunger	VM120-01-05	VM130-01-05	VM122-M5-05	VM132-M5-05	VM-05B	—	138	150
	Roller plunger	VM120-01-06	VM130-01-06	VM122-M5-06	VM132-M5-06	VM-06B	Polyacetal roller	139	150
		VM120-01-06S	VM130-01-06S	VM122-M5-06S	VM132-M5-06S	VM-06BS	Hard steel roller	140	151
	Cross roller plunger	VM120-01-07	VM130-01-07	VM122-M5-07	VM132-M5-07	VM-07B	Polyacetal roller	139	150
		VM120-01-07S	VM130-01-07S	VM122-M5-07S	VM132-M5-07S	VM-07BS	Hard steel roller	140	151
Manual operation	Toggle lever	VM120-01-08	VM130-01-08	VM122-M5-08	VM132-M5-08	VM-08B	—	136	150
	Push button (Mushroom)	VM120-01-30R	VM130-01-30R	VM122-M5-30R	VM132-M5-30R	VM-30AR	Red	153	168
		VM120-01-30B	VM130-01-30B	VM122-M5-30B	VM132-M5-30B	VM-30AB	Black		
		VM120-01-30G	VM130-01-30G	VM122-M5-30G	VM132-M5-30G	VM-30AG	Green		
		VM120-01-30Y	VM130-01-30Y	VM122-M5-30Y	VM132-M5-30Y	VM-30AY	Yellow		
	Push button (Extended)	VM120-01-32R	VM130-01-32R	VM122-M5-32R	VM132-M5-32R	VM-32AR	Red	147	162
		VM120-01-32B	VM130-01-32B	VM122-M5-32B	VM132-M5-32B	VM-32AB	Black		
		VM120-01-32G	VM130-01-32G	VM122-M5-32G	VM132-M5-32G	VM-32AG	Green		
		VM120-01-32Y	VM130-01-32Y	VM122-M5-32Y	VM132-M5-32Y	VM-32AY	Yellow		
	Push button (Flush)	VM120-01-33	VM130-01-33	VM122-M5-33	VM132-M5-33	VM-33A	With a set of red, black, green, yellow	152	167
	Twist selector (2 position)	VM120-01-34R	VM130-01-34R	VM122-M5-34R	VM132-M5-34R	VM-34AR	Red	153	168
		VM120-01-34B	VM130-01-34B	VM122-M5-34B	VM132-M5-34B	VM-34AB	Black		
		VM120-01-34G	VM130-01-34G	VM122-M5-34G	VM132-M5-34G	VM-34AG	Green		
		VM120-01-34Y	VM130-01-34Y	VM122-M5-34Y	VM132-M5-34Y	VM-34AY	Yellow		
	Key selector (2 position)	VM120-01-36	VM130-01-36	VM122-M5-36	VM132-M5-36	VM-36A	—	173	188
	Twist selector (3 position)	(3 port)	(5 port)	(3 port)	(5 port)	—	—		
		VM131-01-35R	VM151-01-35R	VM133-M5-35R	VM153-M5-35R	—	Red	301	341
		VM131-01-35B	VM151-01-35B	VM133-M5-35B	VM153-M5-35B	—	Black		
		VM131-01-35G	VM151-01-35G	VM133-M5-35G	VM153-M5-35G	—	Green		
		VM131-01-35Y	VM151-01-35Y	VM133-M5-35Y	VM153-M5-35Y	—	Yellow		

Note 1) Actuator replacement is available for all types except for roller lever, one way roller lever, and 3 position selector.
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position and 3 position) cannot be removed or replaced alone.

How to Order

VM1 3 1 – 01 – 01 S □ – □

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Suffix for indicator light

Z	With miniature indicator light (Green) (Bottom piping type only)

Port size

01	Rc 1/8
M5	M5 x 0.8 (Female thread)
N01	NPT 1/8
F01	G 1/8

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
07	Cross roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)
35	Twist selector (3 position)

Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Piping direction and the length of push rod

0	Long	Side ported
1	Short	
2	Long	Bottom ported
3	Short	

Number of ports

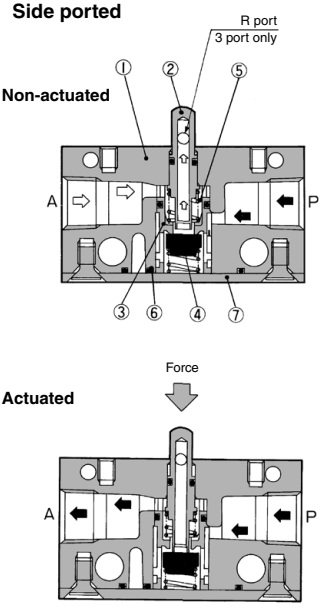
2	2 port
3	3 port

Combination possible: ○, Combination impossible: ×

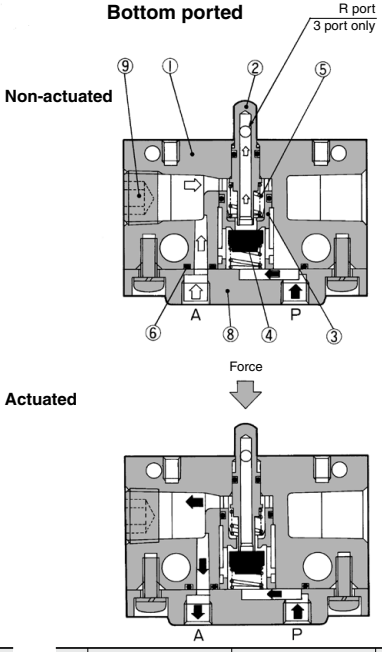
Actuator \ Height of rod push		Side ported		Bottom ported	
		Long	Short	Long	Short
		0	1	2	3
Basic	00	○	○	○	○
Roller lever	01	×	○	×	○
One way roller lever	02	×	○	×	○
Straight plunger	05	○	×	○	×
Roller plunger	06	○	×	○	×
Cross roller plunger	07	○	×	○	×
Toggle lever	08	○	×	○	×
Push button (Mushroom)	30	○	×	○	×
Push button (Extended)	32	○	×	○	×
Push button (Flush)	33	○	×	○	×
Twist selector (2 position)	34	○	×	○	×
Key selector (2 position)	36	○	×	○	×
Twist selector (3 position)	35	×	○	×	○

Construction

Side ported



Bottom ported



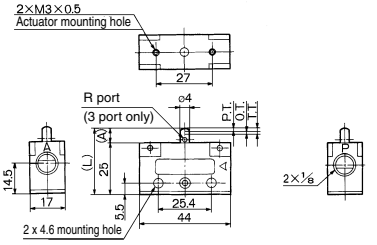
Component Parts

No.	Description	Material	Note
1	**Valve**	ZDC	Platinum silver
2	**Plunger**	POM	
3	**Valve sheet**	POM	
4	**Valve**	NBR	
5	**Spring**	Stainless steel	

No.	Description	Material	Note
6	**Gasket**	NBR	
7	**Cover**	Rolled steel	
8	**Sub-plate**	ZDC	Platinum silver
9	**Hexagon socket head plug**	Rolled steel	

Series VM100/Side Ported

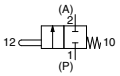
Basic
VM120-01-00
VM130-01-00
VM121-01-00
VM131-01-00



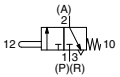
Model	L	A
VM120-01-00 VM130-01-00	32.5	7.5
VM121-01-00 VM131-01-00	28.5	3.5

Symbol

2 port



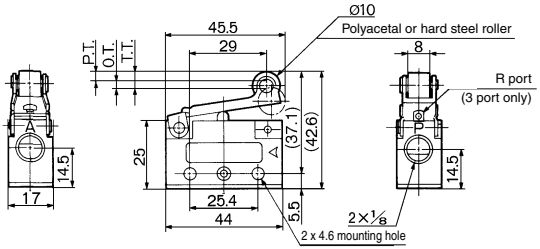
3 port



∗ 0.5 MPa supply

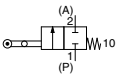
F.O.F. ∗	20 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3.0 mm

Roller lever
VM121-01-01
VM131-01-01
VM121-01-01S
VM131-01-01S

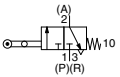


Symbol

2 port



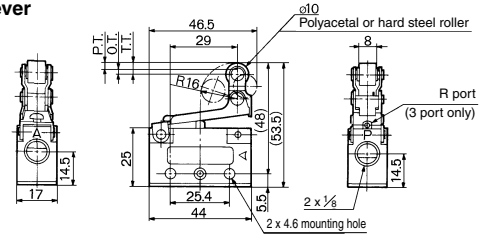
3 port



∗ 0.5 MPa supply

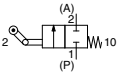
F.O.F. ∗	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

One way roller lever
VM121-01-02
VM131-01-02
VM121-01-02S
VM131-01-02S

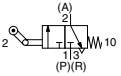


Symbol

2 port



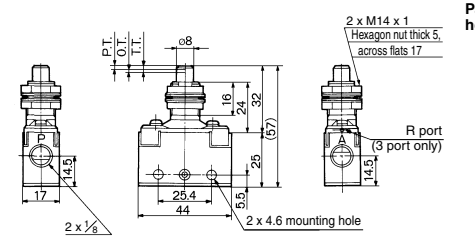
3 port



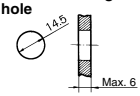
∗ 0.5 MPa supply

F.O.F. ∗	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

Straight plunger
VM120-01-05
VM130-01-05

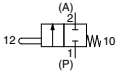


Panel mounting hole

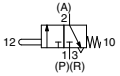


Symbol

2 port



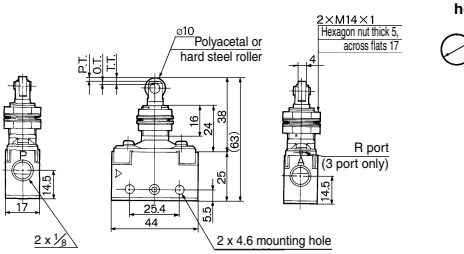
3 port



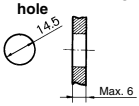
∗ 0.5 MPa supply

F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Roller plunger
VM120-01-06
VM130-01-06
VM120-01-06S
VM130-01-06S

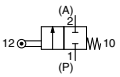


Panel mounting hole

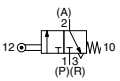


Symbol

2 port



3 port

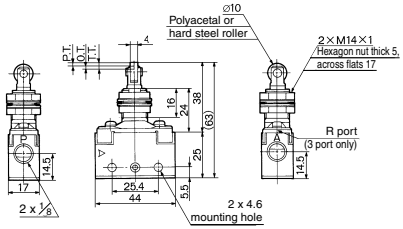


∗ 0.5 MPa supply

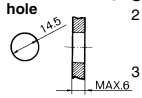
F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Series VM100/Side Ported

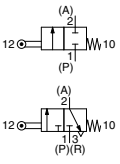
Cross roller plunger
VM120-01-07
VM130-01-07
VM120-01-07S
VM130-01-07S



Panel mounting hole



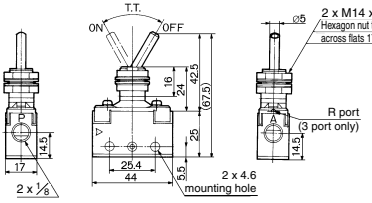
Symbol
2 port
3 port



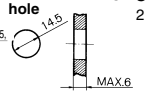
∗ 0.5 MPa supply

F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

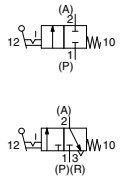
Toggle lever
VM120-01-08
VM130-01-08



Panel mounting hole



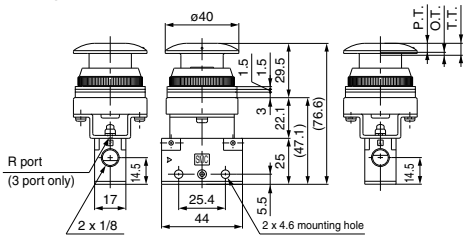
Symbol
2 port
3 port



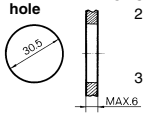
∗ 0.5 MPa supply

F.O.F. ∗	10N
T.T.	60°

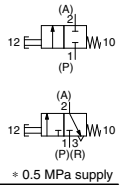
Push button (Mushroom) VM120-01-30R/B/G/Y VM130-01-30R/B/G/Y



Panel mounting hole



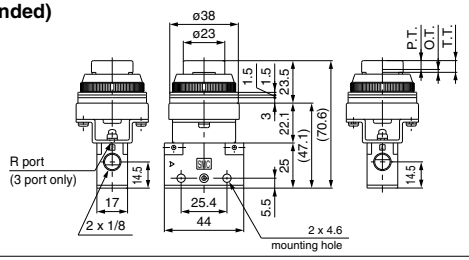
Symbol
2 port
3 port



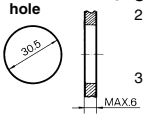
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

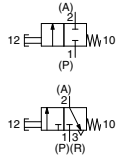
Push button (Extended)
VM120-01-32R/B/G/Y
VM130-01-32R/B/G/Y



Panel mounting hole



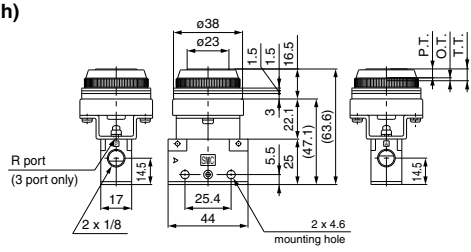
Symbol
2 port
3 port



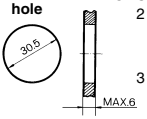
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

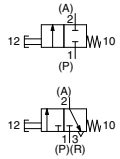
Push button (Flush)
VM120-01-33
VM130-01-33



Panel mounting hole



Symbol
2 port
3 port



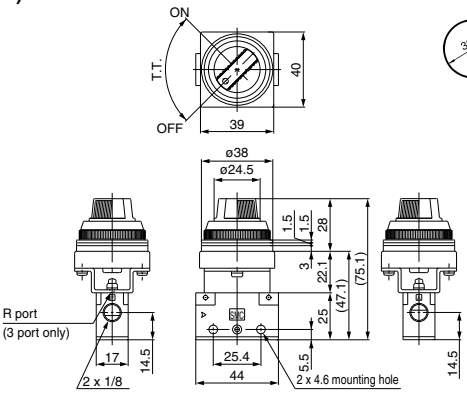
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

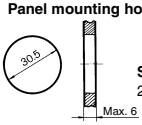
Series VM100/Side Ported

Twist selector (2 position)

VM120-01-34R/B/G/Y
VM130-01-34R/B/G/Y

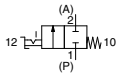


Panel mounting hole

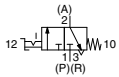


Symbol

2 port



3 port

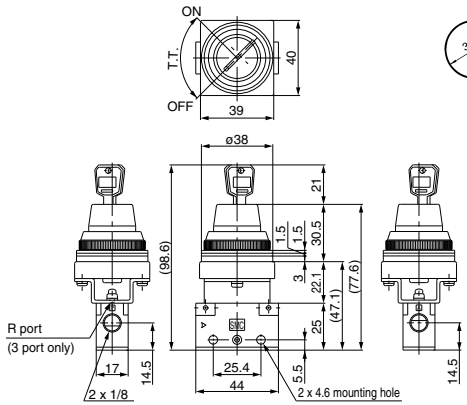


∗ 0.5 MPa supply

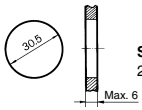
F.O.F. ∗	15 N
T.T.	90°

Key selector (2 position)

VM120-01-36
VM130-01-36

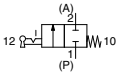


Panel mounting hole

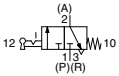


Symbol

2 port



3 port



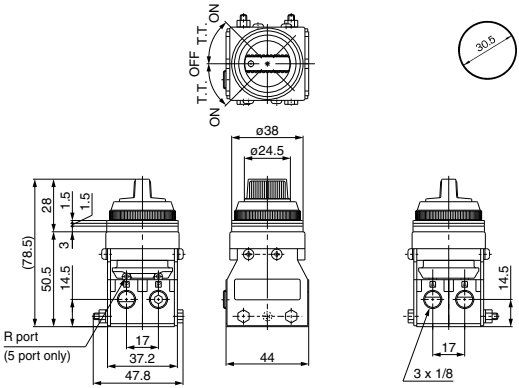
∗ 0.5 MPa supply

F.O.F. ∗	15 N
T.T.	90°

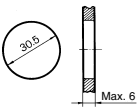
Key can be removed at the “on” and “off” positions.

Twist selector (3 position)

VM131-01-35R/B/G/Y
VM151-01-35R/B/G/Y

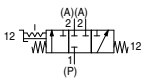


Panel mounting hole

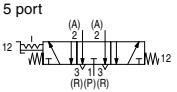


Symbol

3 port



5 port

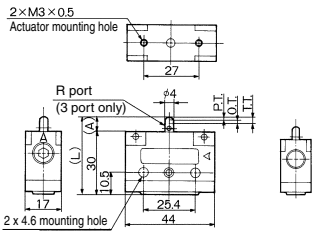


∗ 0.5 MPa supply

F.O.F. ∗	15 N
T.T.	45°

Series VM100/Bottom Ported

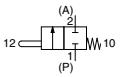
Basic
VM122-M5-00
VM132-M5-00
VM123-M5-00
VM133-M5-00



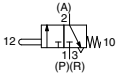
Model	L	A
VM122-M5-00 **VM132-M5-00**	37.5	7.5
VM123-M5-00 **VM133-M5-00**	33.5	3.5

Symbol

2 port



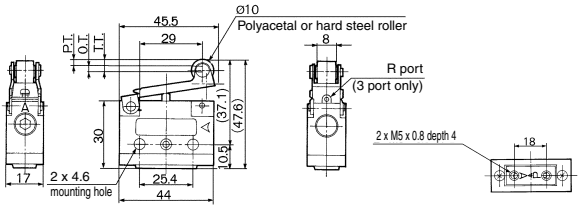
3 port



∗ 0.5 MPa supply

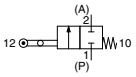
F.O.F ∗	20 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3.0 mm

Roller lever
VM123-M5-01
VM133-M5-01
VM123-M5-01S
VM133-M5-01S

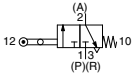


Symbol

2 port



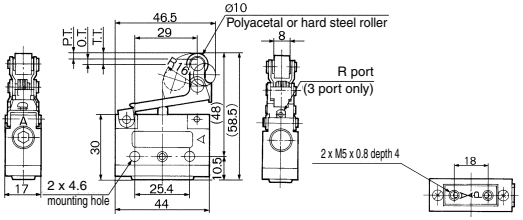
3 port



∗ 0.5 MPa supply

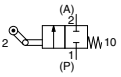
F.O.F. ∗	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

One way roller lever
VM123-M5-02
VM133-M5-02
VM123-M5-02S
VM133-M5-02S

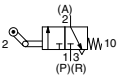


Symbol

2 port



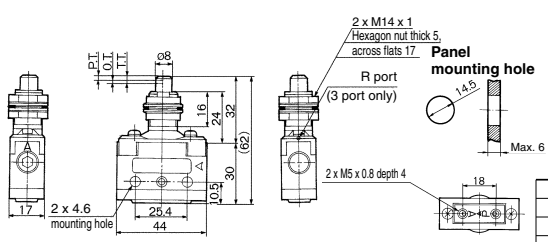
3 port



∗ 0.5 MPa supply

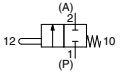
F.O.F. ∗	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

Straight plunger
VM122-M5-05
VM132-M5-05

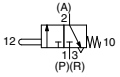


Symbol

2 port



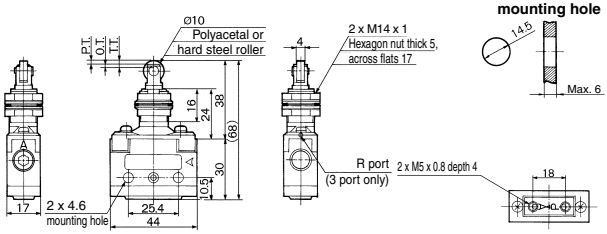
3 port



∗ 0.5 MPa supply

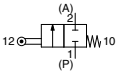
F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Roller plunger
VM122-M5-06
VM132-M5-06
VM122-M5-06S
VM132-M5-06S

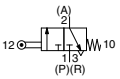


Symbol

2 port



3 port

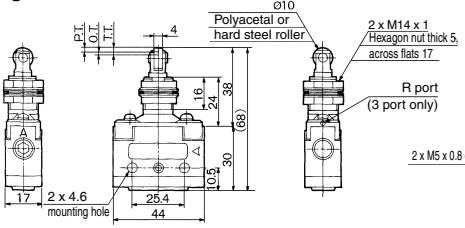


∗ 0.5 MPa supply

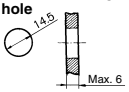
F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Series VM100/Bottom Ported

Cross roller plunger
VM122-M5-07
VM132-M5-07
VM122-M5-07S
VM132-M5-07S

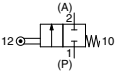


Panel mounting hole

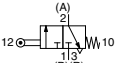


Symbol

2 port



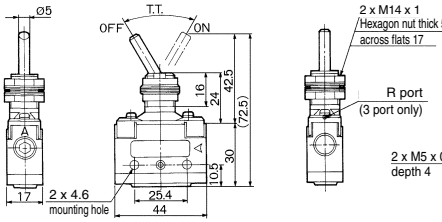
3 port



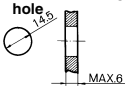
∗ 0.5 MPa supply

F.O.F. ∗	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Toggle lever
VM122-M5-08
VM132-M5-08

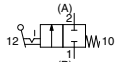


Panel mounting hole

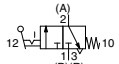


Symbol

2 port



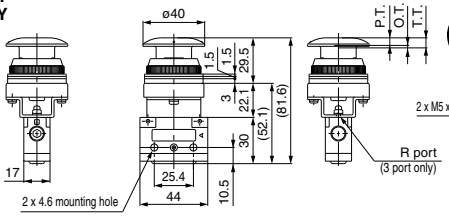
3 port



∗ 0.5 MPa supply

F.O.F. ∗	10 N
P.T.	60°

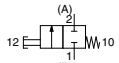
Push button (Mushroom)
VM122-M5-30R/B/G/Y
VM132-M5-30R/B/G/Y



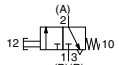
Panel mounting hole

Symbol

2 port



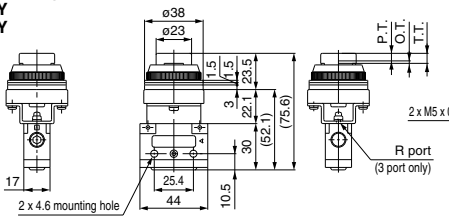
3 port



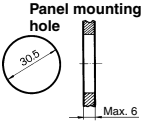
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Extended)
VM122-M5-32R/B/G/Y
VM132-M5-32R/B/G/Y

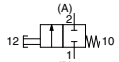


Panel mounting hole

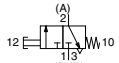


Symbol

2 port



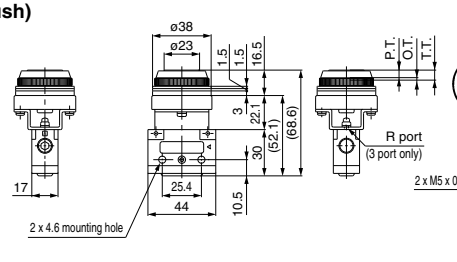
3 port



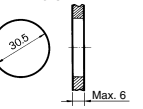
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Flush)
VM122-M5-33
VM132-M5-33

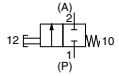


Panel mounting hole

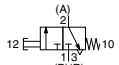


Symbol

2 port



3 port

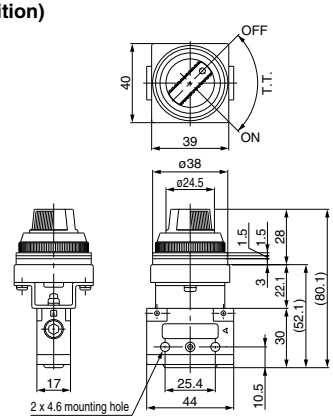


∗ 0.5 MPa supply

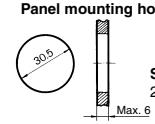
F.O.F. ∗	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Series VM100/Bottom Ported

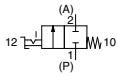
Twist selector (2 position)
VM122-M5-34R/B/G/Y
VM132-M5-34R/B/G/Y



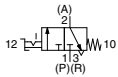
Panel mounting hole



Symbol
2 port



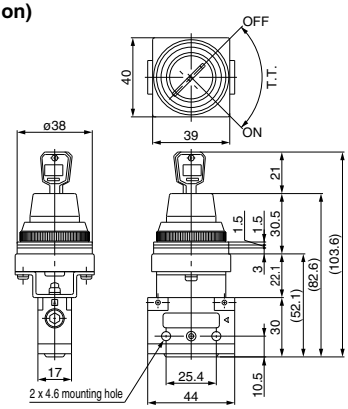
3 port



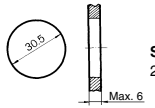
∗ 0.5 MPa supply

F.O.F. ∗	15 N
T.T.	90°

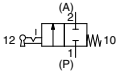
Key selector (2 position)
VM122-M5-36
VM132-M5-36



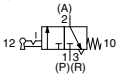
Panel mounting hole



Symbol
2 port



3 port

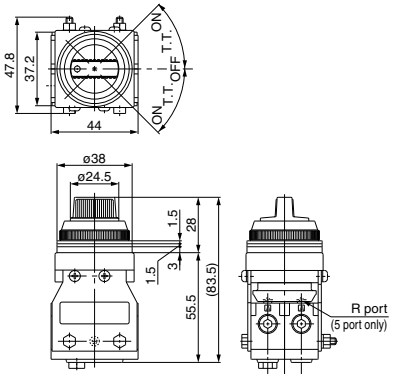


∗ 0.5 MPa supply

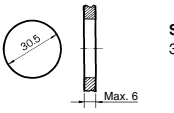
F.O.F. ∗	15 N
T.T.	90°

Key can be removed at the "on" and "off" positions.

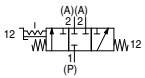
Twist selector (3 position)
VM133-M5-35R/B/G/Y
VM153-M5-35R/B/G/Y



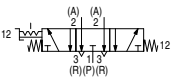
Panel mounting hole



Symbol
3 port



5 port



∗ 0.5 MPa supply

F.O.F. ∗	20 N
T.T.	45°

2/3 Port Mechanical Valve

Series VM200

RoHS

Large flow capacity.

A variety of actuator types.

Specifications

Fluid		Air/Inert gas		
Operating pressure		0 to 1.0 MPa		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(IN)→2(OUT)	3.7	0.4	0.87
	2(OUT)→3(R)	3.2	0.1	0.69
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size		1/4		

Model

	Actuator \ No. of ports	2 port	3 port	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VM220-02-00	VM230-02-00	—	—	110
	Roller lever	VM220-02-01	VM230-02-01	VM-01A	Polyacetal roller	160
		VM220-02-01S	VM230-02-01S	VM-01AS	Hard steel roller	170
	One way roller lever	VM220-02-02	VM230-02-02	VM-02A	Polyacetal roller	170
		VM220-02-02S	VM230-02-02S	VM-02AS	Hard steel roller	180
	Straight plunger	VM220-02-05	VM230-02-05	VM-05A	—	240
	Roller plunger	VM220-02-06	VM230-02-06	VM-06A	Polyacetal roller	230
		VM220-02-06S	VM230-02-06S	VM-06AS	Hard steel roller	240
	Cross roller plunger	VM220-02-07	VM230-02-07	VM-07A	Polyacetal roller	230
		VM220-02-07S	VM230-02-07S	VM-07AS	Hard steel roller	240
Manual operation	Toggle lever	VM220-02-08	VM230-02-08	VM-08A	—	220
	Push button (Mushroom)	VM220-02-30R	VM230-02-30R	VM-30AR	Red	169
		VM220-02-30B	VM230-02-30B	VM-30AB	Black	
		VM220-02-30G	VM230-02-30G	VM-30AG	Green	
		VM220-02-30Y	VM230-02-30Y	VM-30AY	Yellow	
	Push button (Extended)	VM220-02-32R	VM230-02-32R	VM-32AR	Red	163
		VM220-02-32B	VM230-02-32B	VM-32AB	Black	
		VM220-02-32G	VM230-02-32G	VM-32AG	Green	
		VM220-02-32Y	VM230-02-32Y	VM-32AY	Yellow	
	Push button (Flush)	VM220-02-33	VM230-02-33	VM-33A	With a set of red, black, green, yellow	168
	Twist selector (2 position)	VM220-02-34R	VM230-02-34R	VM-34AR	Red	169
		VM220-02-34B	VM230-02-34B	VM-34AB	Black	
		VM220-02-34G	VM230-02-34G	VM-34AG	Green	
		VM220-02-34Y	VM230-02-34Y	VM-34AY	Yellow	
	Key selector (2 position)	VM220-02-36	VM230-02-36	VM-36A	—	189
	Twist selector (3 position)	(3 port)	(5 port)	—	—	
		VM230-02-35R	VM250-02-35R	—	Red	451
		VM230-02-35B	VM250-02-35B	—	Black	
		VM230-02-35G	VM250-02-35G	—	Green	
		VM230-02-35Y	VM250-02-35Y	—	Yellow	
	Foot pedal	VM220-02-40	VM230-02-40	—	—	450

Note 1) Actuator replacement is available for all types except twist selector (3 position) and foot pedal.
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position and 3 position) cannot be removed or replaced alone.

How to Order

VM2 [3] 0 – [02] – [01] [S] – [ ]

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
07	Cross roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)
35	Twist selector (3 position)
40	Foot pedal

Port size

02	Rc 1/4
N02	NPT 1/4
F02	G 1/4

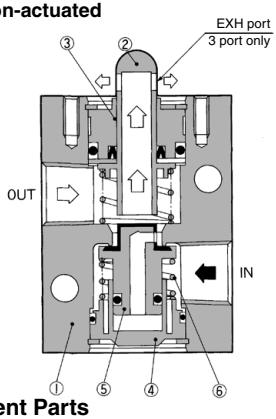
Number of ports

2	2 port
3	3 port

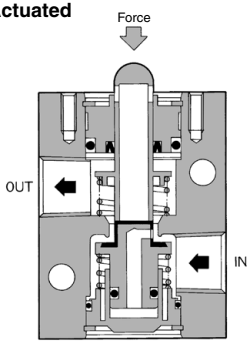
Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated



Actuated



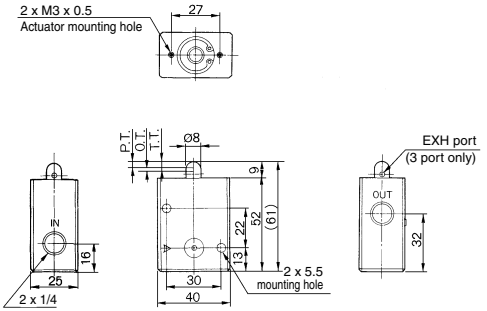
Component Parts

No.	Description	Material	Note
1	**Valve**	ADC	Platinum silver
2	**Plunger**	POM	
3	**Plunger retainer**	PBT	

No.	Description	Material	Note
4	**Cover**	POM	
5	**Valve**	Brass, NBR	
6	**Spring**	Steel	

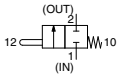
Series VM200

Basic
VM220-02-00
VM230-02-00

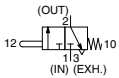


Symbol

2 port



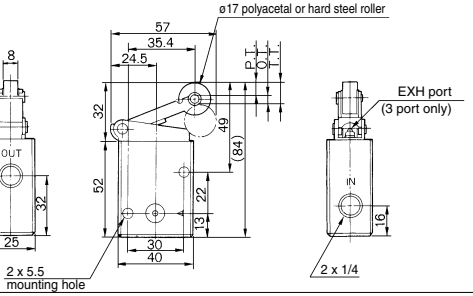
3 port



∗ 0.5 MPa supply

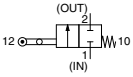
F.O.F. ∗	52 N
P.T.	3.0 mm
O.T.	2.0 mm
T.T.	5.0 mm

Roller lever
VM220-02-01
VM230-02-01
VM220-02-01S
VM230-02-01S

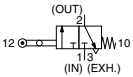


Symbol

2 port



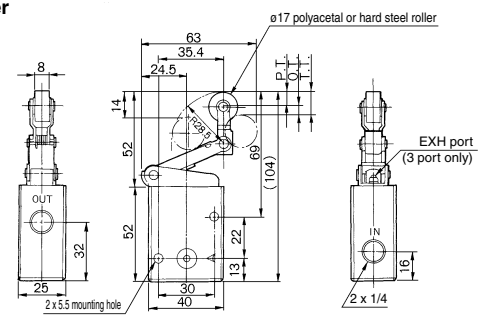
3 port



∗ 0.5 MPa supply

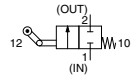
F.O.F. ∗	24 N
P.T.	6.5 mm
O.T.	4.5 mm
T.T.	11.0 mm

One way roller lever
VM220-02-02
VM230-02-02
VM220-02-02S
VM230-02-02S

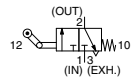


Symbol

2 port



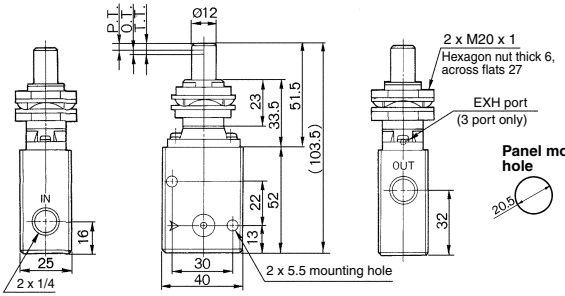
3 port



∗ 0.5 MPa supply

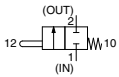
F.O.F. ∗	22 N
P.T.	7.0 mm
O.T.	5.0 mm
T.T.	12.0 mm

Straight plunger
VM220-02-05
VM230-02-05

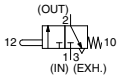


Symbol

2 port



3 port

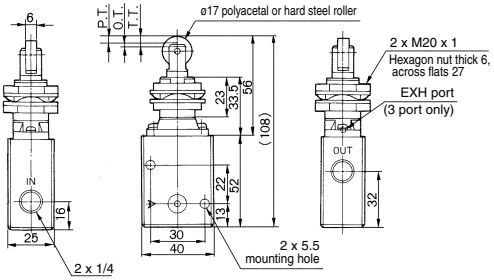


∗ 0.5 MPa supply

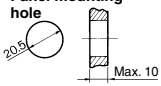
F.O.F. ∗	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Series VM200

Roller plunger
VM220-02-06
VM230-02-06
VM220-02-06S
VM230-02-06S

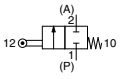


Panel mounting hole

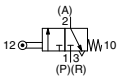


Symbol

2 port



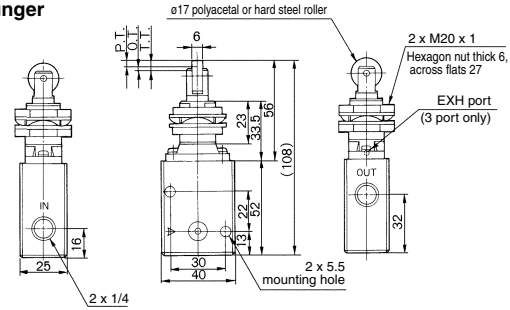
3 port



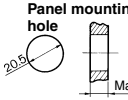
∗ 0.5 MPa supply

F.O.F. ∗	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Cross roller plunger
VM220-02-07
VM230-02-07
VM220-02-07S
VM230-02-07S

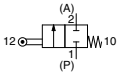


Panel mounting hole

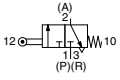


Symbol

2 port



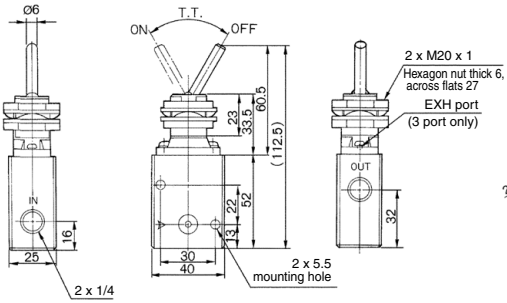
3 port



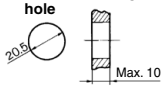
∗ 0.5 MPa supply

F.O.F. ∗	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Toggle lever
VM220-02-08
VM230-02-08

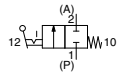


Panel mounting hole

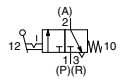


Symbol

2 port



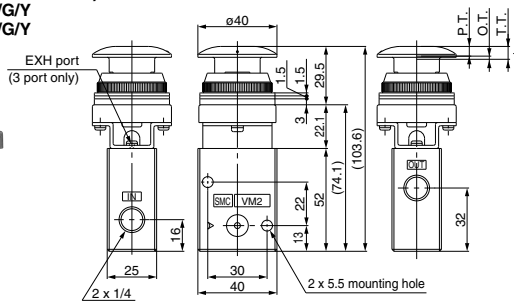
3 port



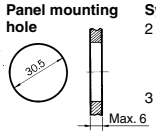
∗ 0.5 MPa supply

F.O.F. ∗	12 N
T.T.	60°

Push button (Mushroom)
VM220-02-30R/B/G/Y
VM230-02-30R/B/G/Y

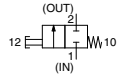


Panel mounting hole

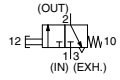


Symbol

2 port



3 port

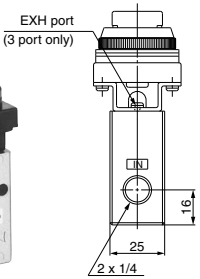


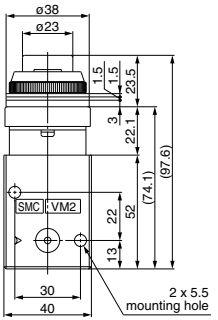
∗ 0.5 MPa supply

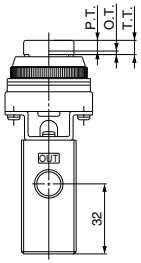
F.O.F. ∗	52 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Series VM200

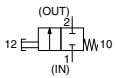
Push button (Extended)
VM220-02-32R/B/G/Y
VM230-02-32R/B/G/Y



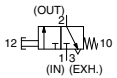




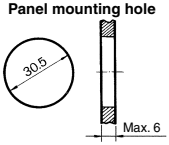
Symbol
2 port



3 port



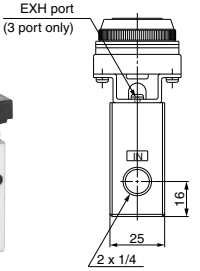
Panel mounting hole

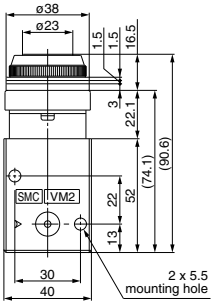


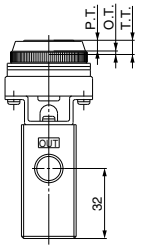
∗ 0.5 MPa supply

F.O.F. ∗	52 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

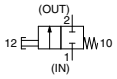
Push button (Flush)
VM220-02-33
VM230-02-33



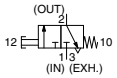




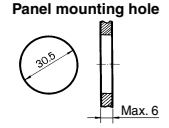
Symbol
2 port



3 port



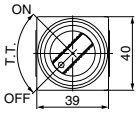
Panel mounting hole

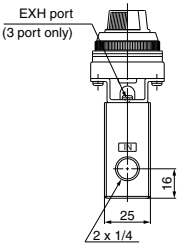


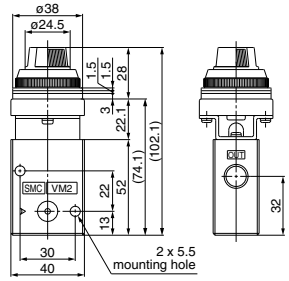
∗ 0.5 MPa supply

F.O.F. ∗	52 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

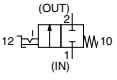
Twist selector (2 position)
VM220-02-34R/B/G/Y
VM230-02-34R/B/G/Y



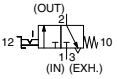




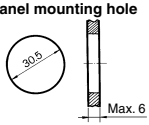
Symbol
2 port



3 port



Panel mounting hole



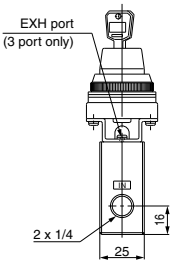
∗ 0.5 MPa supply

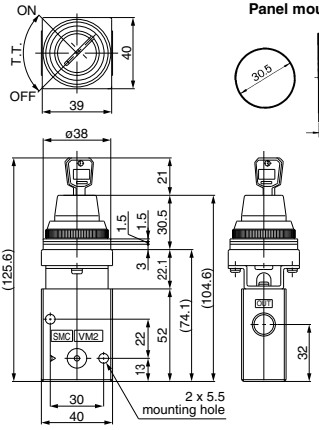
F.O.F. ∗	32 N
T.T.	90°

Series VM200

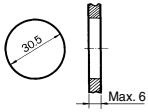
Key selector (2 position)

VM220-02-36
VM230-02-36



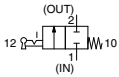


Panel mounting hole

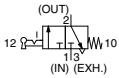


Symbol

2 port



3 port



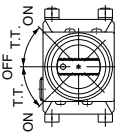
∗ 0.5 MPa supply

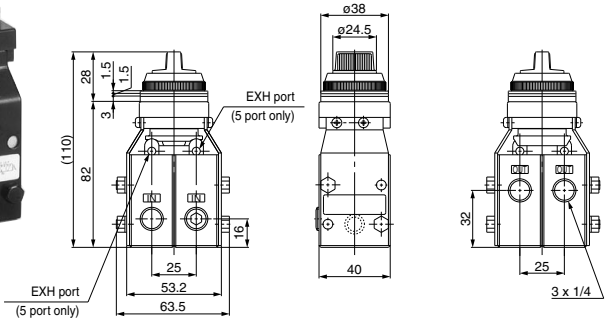
F.O.F. ∗	32 N
T.T.	90°

Key can be removed at the "on" and "off" positions.

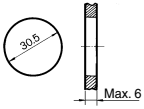
Twist selector (3 position)

VM230-02-35R/B/G/Y
VM250-02-35R/B/G/Y



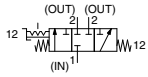


Panel mounting hole

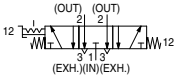


Symbol

3 port



5 port

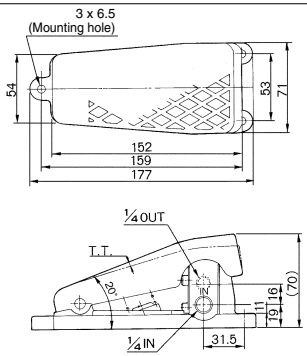


∗ 0.5 MPa supply

F.O.F. ∗	40 N
T.T.	45°

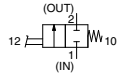
Foot pedal

VM220-02-40
VM230-02-40

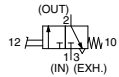


Symbol

2 port



3 port



∗ 0.5 MPa supply

F.O.F. ∗	65 N
T.T.	1.2°

3 Port Mechanical Valve

Series VM400

RoHS

Either N.C. or N.O. is available.

Piping possible to any port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Specifications

Fluid		Air/Inert gas		
Operating pressure		–100 kPa to 1.0 MPa		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(NC)↔2(OUT)	1.4	0.2	0.29
	2(NO)↔3(OUT)	1.4	0.15	0.29
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated)		
Port size		1/8		

Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VM430-01-00	—	—	110
	Roller lever	VM430-01-01	VM-01A	Polyacetal roller	140
		VM430-01-01S	VM-01AS	Hard steel roller	150
	One way roller lever	VM430-01-02	VM-02A	Polyacetal roller	150
		VM430-01-02S	VM-02AS	Hard steel roller	160
	Straight plunger	VM430-01-05	VM-05A	—	220
	Roller plunger	VM430-01-06	VM-06A	Polyacetal roller	210
		VM430-01-06S	VM-06AS	Hard steel roller	220
	Cross roller plunger	VM430-01-07	VM-07A	Polyacetal roller	210
		VM430-01-07S	VM-07AS	Hard steel roller	220
Manual operation	Toggle lever	VM430-01-08	VM-08A	—	200
	Push button (Mushroom)	VM430-01-30R	VM-30AR	Red	168
		VM430-01-30B	VM-30AB	Black	
		VM430-01-30G	VM-30AG	Green	
		VM430-01-30Y	VM-30AY	Yellow	
	Push button (Extended)	VM430-01-32R	VM-32AR	Red	162
		VM430-01-32B	VM-32AB	Black	
		VM430-01-32G	VM-32AG	Green	
		VM430-01-32Y	VM-32AY	Yellow	
	Push button (Flush)	VM430-01-33	VM-33A	With a set of red, black, green, yellow	167
	Twist selector (2 position)	VM430-01-34R	VM-34AR	Red	168
		VM430-01-34B	VM-34AB	Black	
		VM430-01-34G	VM-34AG	Green	
		VM430-01-34Y	VM-34AY	Yellow	
	Key selector (2 position)	VM430-01-36	VM-36A	—	188

Note 1) Actuator replacement is available for all types.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.

Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VM4 3 0 – 01 – 01 S – ☐

Number of ports

3	3 port

Port size

01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
07	Cross roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)

Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Suffix for actuator

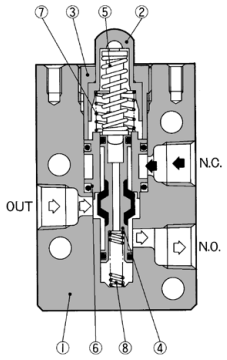
S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Made to Order
(Refer to pages 2342 to 2345 for details.)

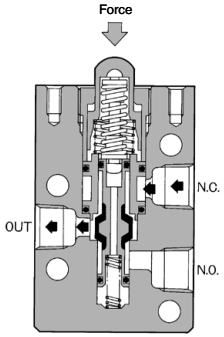
X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Construction

Non-actuated



Actuated



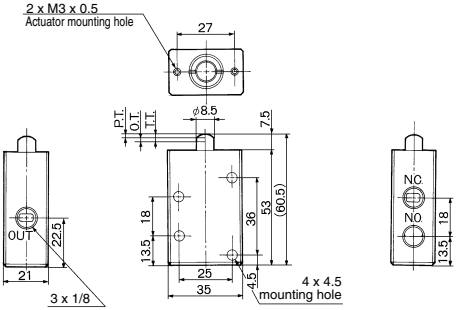
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Plunger**	POM	
3	**Upper lid**	Brass	Black zinc chromated
4	**Spool valve**	Aluminum alloy, NBR	Rubber lined

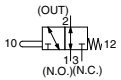
No.	Description	Material	Note
5	**Over travel spring**	Stainless steel	
6	**Retainer**	Brass	
7	**Spring**	Stainless steel	
8	**Spring**	Stainless steel	

Series VM400

Basic
VM430-01-00

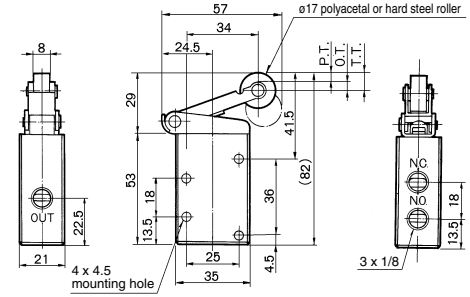


Symbol

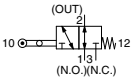


F.O.F.	26 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Roller lever
VM430-01-01
VM430-01-01S

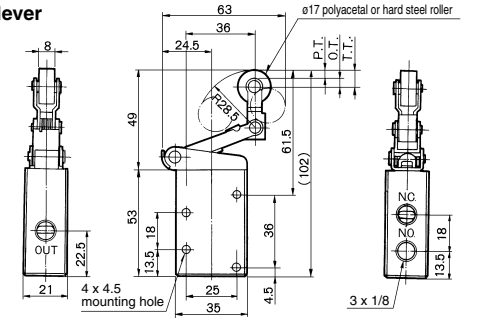


Symbol

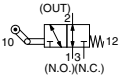


F.O.F.	12 N
P.T.	4.0 mm
O.T.	4.5 mm
T.T.	8.5 mm

One way roller lever
VM430-01-02
VM430-01-02S

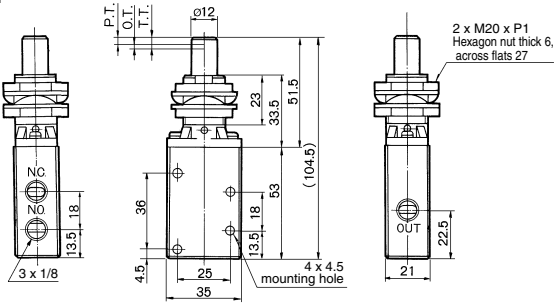


Symbol

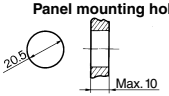


F.O.F.	11 N
P.T.	4.0 mm
O.T.	5.0 mm
T.T.	9.0 mm

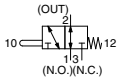
Straight plunger
VM430-01-05



Panel mounting hole



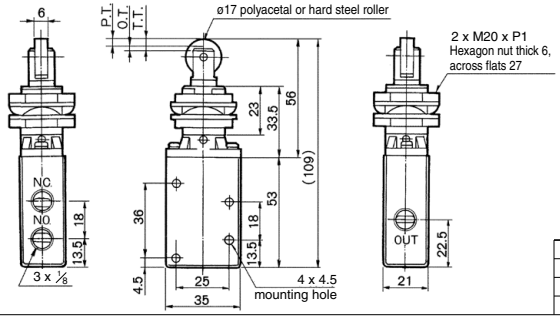
Symbol



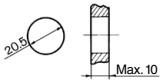
F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Series VM400

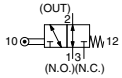
Roller plunger
VM430-01-06
VM430-01-06S



Panel mounting hole

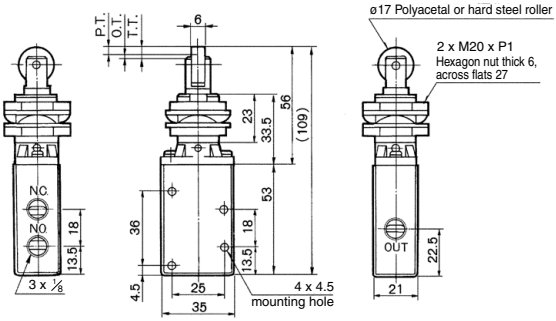


Symbol

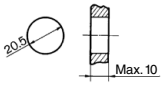


F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

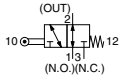
Cross roller plunger
VM430-01-07
VM430-01-07S



Panel mounting hole

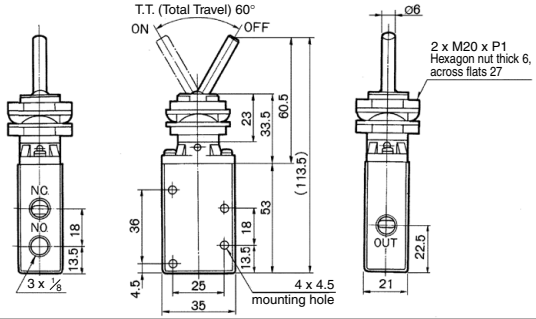


Symbol

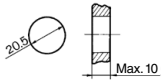


F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

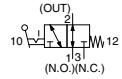
Toggle lever
VM430-01-08



Panel mounting hole

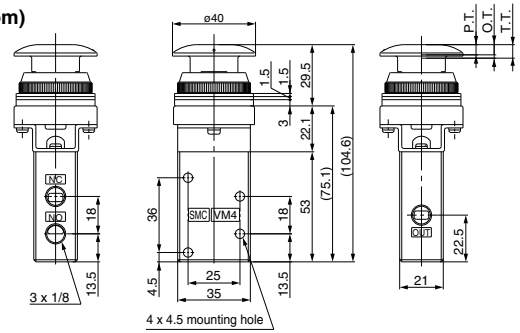


Symbol

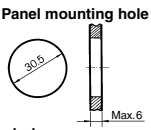


F.O.F.	7 N
T.T.	60°

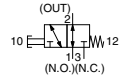
Push button (Mushroom)
VM430-01-30R/B/G/Y



Panel mounting hole



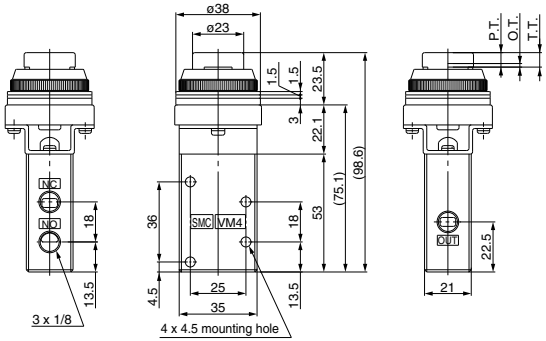
Symbol



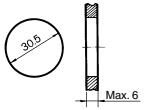
F.O.F.	26 N
P.T.	4.6 mm
O.T.	1.6 mm
T.T.	6.5 mm

Series VM400

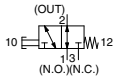
Push button (Extended)
VM430-01-32R/B/G/Y



Panel mounting hole

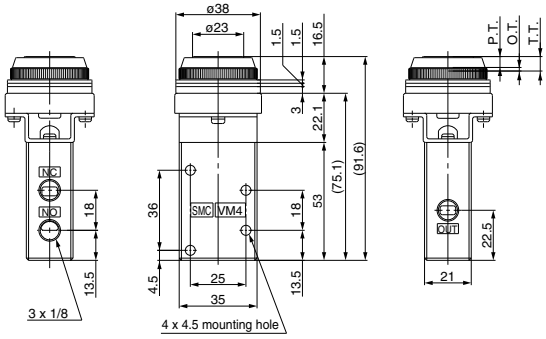


Symbol

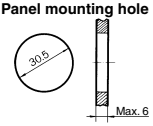


F.O.F.	26 N
P.T.	5.4 mm
O.T.	1.6 mm
T.T.	6.5 mm

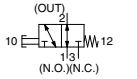
Push button (Flush)
VM430-01-33



Panel mounting hole

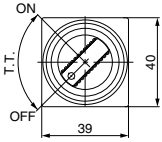


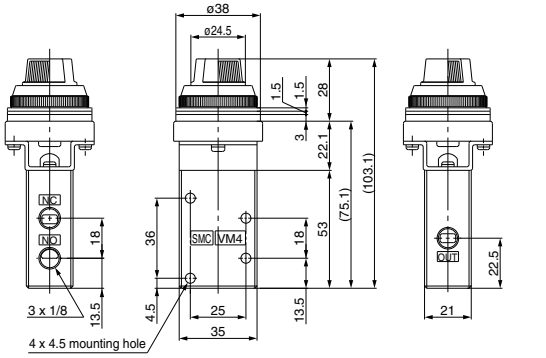
Symbol



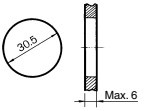
F.O.F.	26 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Twist selector (2 position)
VM430-01-34R/B/G/Y

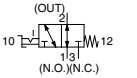




Panel mounting hole



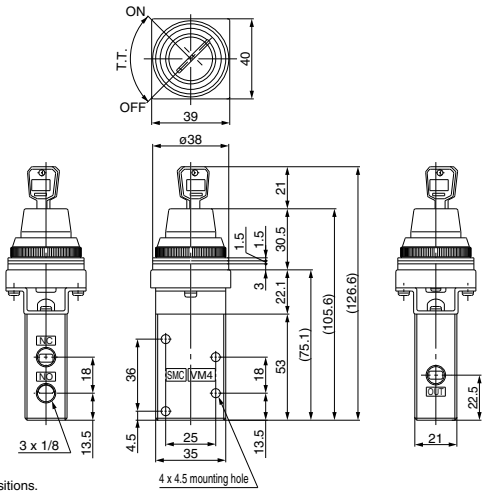
Symbol



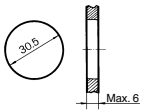
F.O.F.	20 N
T.T.	90°

Series VM400

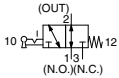
Key selector (2 position)
VM430-01-36



Panel mounting hole



Symbol



Key can be removed at the “on” and “off” positions.

F.O.F.	20 N
T.T.	90°

VM
VMG
VR
VR51
VHK
VH
VHS□
VHS

3 Port Mechanical Valve: Heavy Duty Type

Series VM800

RoHS

Sturdy construction.

Either N.C. or N.O. is available.

Piping possible to any port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Many actuator positions and orientation options.

Specifications

Fluid		Air/Inert gas		
Operating pressure		–100 kPa to 1.0 MPa		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C [dm³/(s·bar)]	b	Cv
	1 (NC) ↔ 2 (OUT)	1.4	0.2	0.29
	2 (NO) ↔ 3 (OUT)	1.4	0.15	0.29
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size		1/8		

Model

Actuator	Model	Actuator part no.	Weight (g)
Basic	VM830-01-00	—	180
Roller lever	VM830-01-01	VM-01F	280
Adjustable roller lever	VM830-01-13	VM-13F	300
Adjustable rod lever	VM830-01-14	VM-14F	276

• Actuator replacement is available.

How to Order

VM830 – 01 – 01

Number of ports

3	3 port

Port size

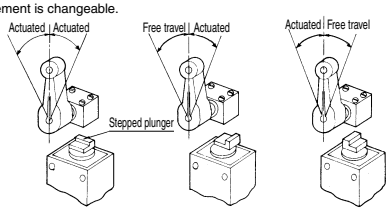
01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

Actuator type

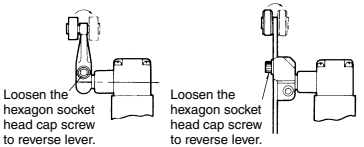
00	Basic
01	Roller lever
13	Adjustable roller lever
14	Adjustable rod lever

Application

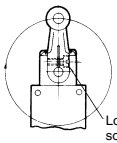
● Movement is changeable.



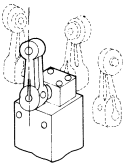
● Roller can be mounted to inside of lever.



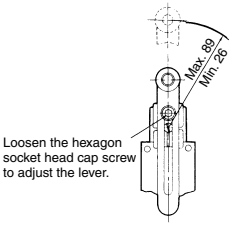
● Lever location can be changed.

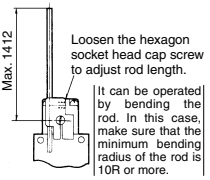


● Head direction can be changed.



● Lever length adjustment.

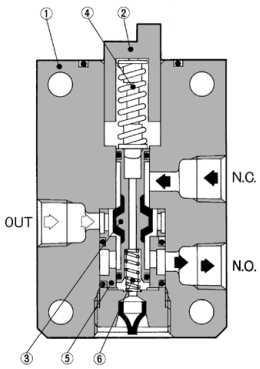



Max. 1412
Loosen the hexagon socket head cap screw to adjust rod length.
It can be operated by bending the rod. In this case, make sure that the minimum bending radius of the rod is 10R or more.

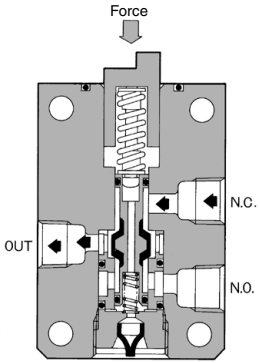
SMC

Construction

Non-actuated



Actuated



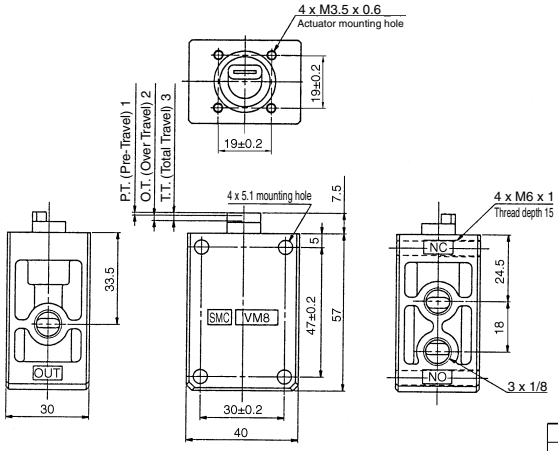
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Plunger**	POM	
3	**Spool valve**	Aluminum alloy, NBR	Rubber lined

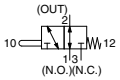
No.	Description	Material	Note
4	**Over travel spring**	Stainless steel	
5	**Retainer**	Brass	
6	**Spring**	Steel	Zinc chromated

Series VM800

Basic / **VM830-01-00**



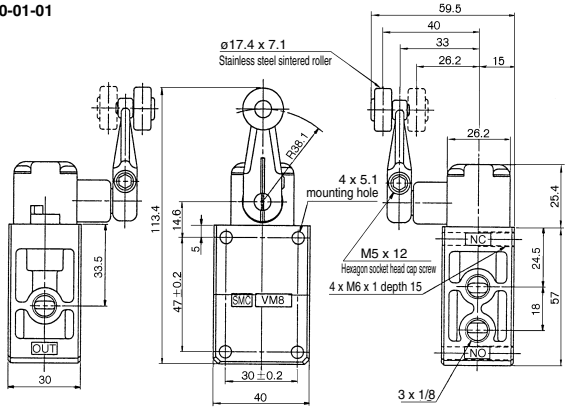
Symbol



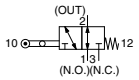
F.O.F.	23 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Series VM800

Roller lever/ VM830-01-01

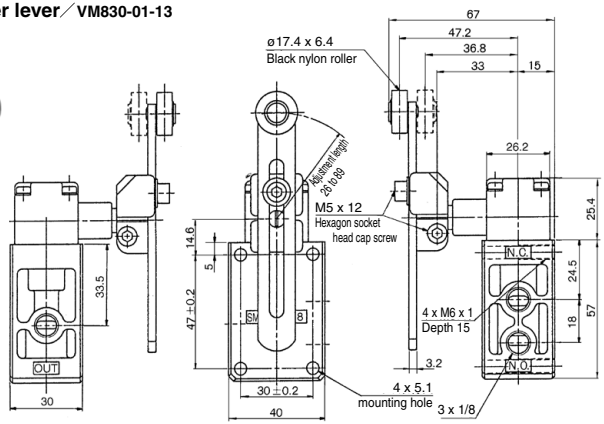


Symbol

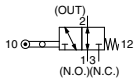


F.O.F.	20 N
P.T.	20°
O.T.	30°
T.T.	50°

Adjustable roller lever/ VM830-01-13



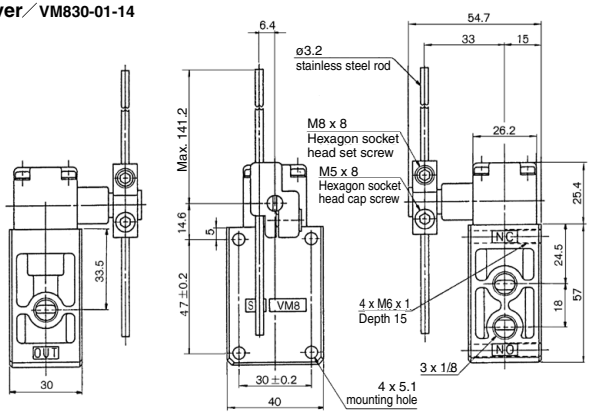
Symbol



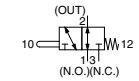
∗ At lever length 38.1 mm

F.O.F. ∗	20 N
P.T.	20°
O.T.	30°
T.T.	50°

Adjustable rod lever/ VM830-01-14



Symbol



∗ At lever length 141.2 mm

F.O.F. ∗	2.3 N
P.T.	20°
O.T.	30°
T.T.	50°

5 Port Mechanical Valve
Metal Seal
Series VZM400

RoHS

Compact design, large flow capacity
High cycle rate, long life/300 c.p.m. or less

Piping possible to any EXH port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Pilot type is selectable. (Internal pilot and external pilot)

Specifications

Fluid		Air/Inert gas		
Operating pressure		0.15 to 1.0 MPa (1)		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(P)→2(B)/4(A)	2.0	0.14	0.49
	2(B)/4(A)→4(EB)/5(EA)	1.7	0.25	0.44
Maximum frequency (Mechanical operation type)		300 c.p.m. or less		
Lubrication		Not required (Use turbine oil class 1 ISO VG32, if lubricated.)		
Port size		Main valve/1⁄8		
		Pilot valve (EXH)/M5 x 0.8		
Option		Foot bracket (2)		

Note 1) External pilot type Main valve: 0 to 1.0 MPa
Pilot valve: 0.15 to 1.0 MPa
Note 2) The standard body can not be retrofitted with a foot bracket.

Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VZM450-01-00	—	—	120
	Roller lever	VZM450-01-01	VM-01C	Polyacetal roller	160
		VZM450-01-01S	VM-01CS	Hard steel roller	170
	One way roller lever	VZM450-01-02	VM-02C	Polyacetal roller	170
		VZM450-01-02S	VM-02CS	Hard steel roller	180
	Straight plunger	VZM450-01-05	VM-05C	—	200
	Roller plunger	VZM450-01-06	VM-06C	Polyacetal roller	200
		VZM450-01-06S	VM-06CS	Hard steel roller	200
Manual operation	Toggle lever	VZM450-01-08	VM-08C	—	190
	Push button (Mushroom)	VZM450-01-30R	VM-30CR	Red	199
		VZM450-01-30B	VM-30CB	Black	
		VZM450-01-30G	VM-30CG	Green	
		VZM450-01-30Y	VM-30CY	Yellow	
	Push button (Extended)	VZM450-01-32R	VM-32CR	Red	192
		VZM450-01-32B	VM-32CB	Black	
		VZM450-01-32G	VM-32CG	Green	
		VZM450-01-32Y	VM-32CY	Yellow	
	Push button (Flush)	VZM450-01-33	VM-33C	With a set of red, black, green, yellow	197
	Twist selector (2 position)	VZM450-01-34R	VM-34CR	Red	198
		VZM450-01-34B	VM-34CB	Black	
		VZM450-01-34G	VM-34CG	Green	
		VZM450-01-34Y	VM-34CY	Yellow	
	Key selector (2 position)	VZM450-01-36	VM-36C	—	217

Note 1) Actuator replacement is available for all types.
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VZM45 [0] – [01] – [01] [S] – [ ] – [ ]

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Option

F	Foot bracket (Only internal pilot)

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push botton selector
B	Black	
G	Green	
Y	Yellow	

Actuator type

00	Basic
01	Roller lever
02	One Way Roller Lever
05	Straight plunger
06	Roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)

Port size

01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

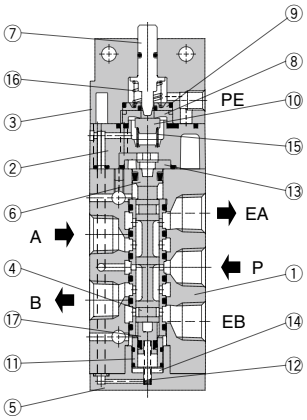
Body option

0	Internal pilot type
1	External pilot type

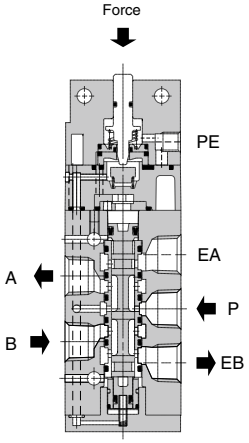
Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated



Actuated



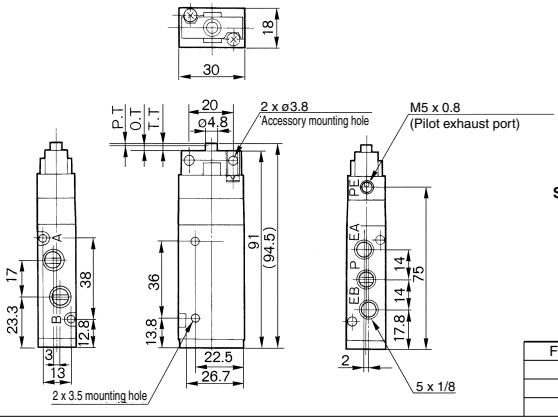
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Pilot body**	PBT	ZDC only for external pilot type
3	**Head cover**	ZDC	Black zinc chromated
4	**Spool/sleeve**	Stainless steel	
5	**End cover**	POM	
6	**Piston A**	POM	
7	**Plunger**	POM	
8	**Valve seat (A)**	POM	
9	**Valve seat (B)**	POM	

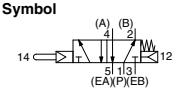
No.	Description	Material	Note
10	**Valve**	NBR	
11	**Piston guide B**	Aluminum alloy	
12	**Return spring**	Stainless steel	
13	**Cushion**	Rubber	
14	**Cushion**	Rubber	
15	**Valve spring**	Stainless steel	
16	**Return spring**	Stainless steel	
17	**Piston B**	POM	

Series VZM400

Basic / VZM450-01-00



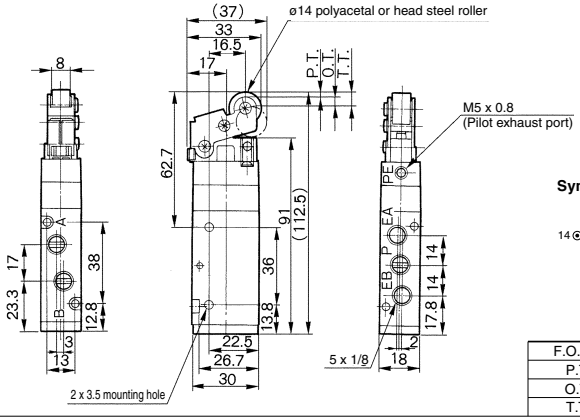
Symbol



∗ 0.5 MPa supply

F.O.F. ∗	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever / VZM450-01-01 · VZM450-01-01S



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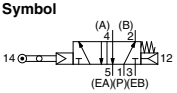
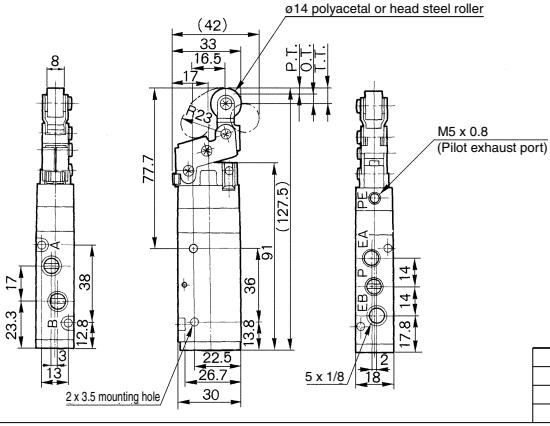


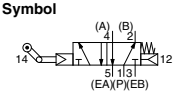
∗ 0.5 MPa supply

F.O.F. ∗	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever / VZM450-01-02 · VZM450-01-02S



Symbol

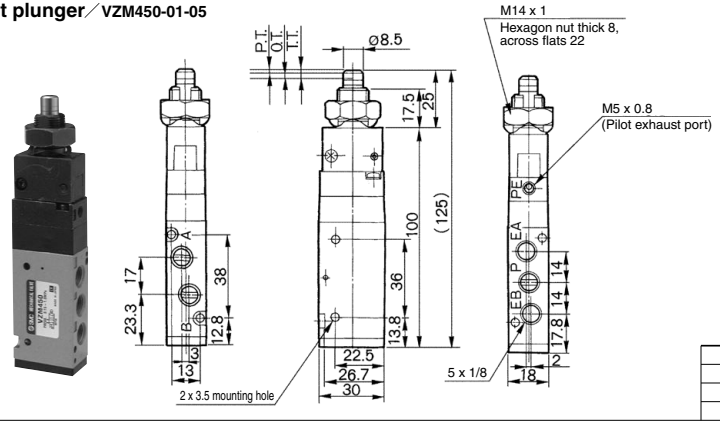


∗ 0.5 MPa supply

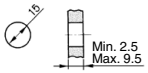
F.O.F. ∗	7 N
P.T.	2.4 mm
O.T.	4.6 mm
T.T.	7.0 mm

Series VZM400

Straight plunger / VZM450-01-05



Panel mounting hole



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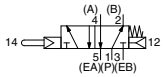
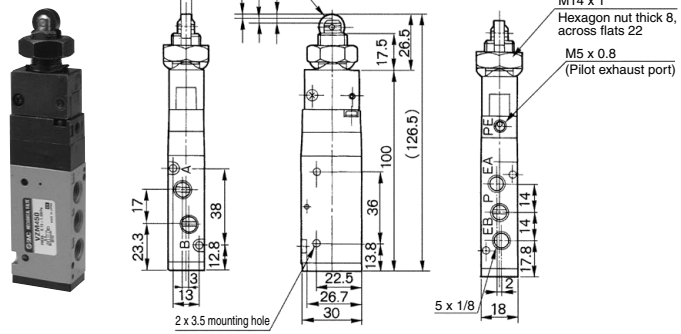


∗ 0.5 MPa supply

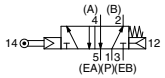
F.O.F. ∗	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Roller plunger / VZM450-01-06 · VZM450-01-06S



Panel mounting hole

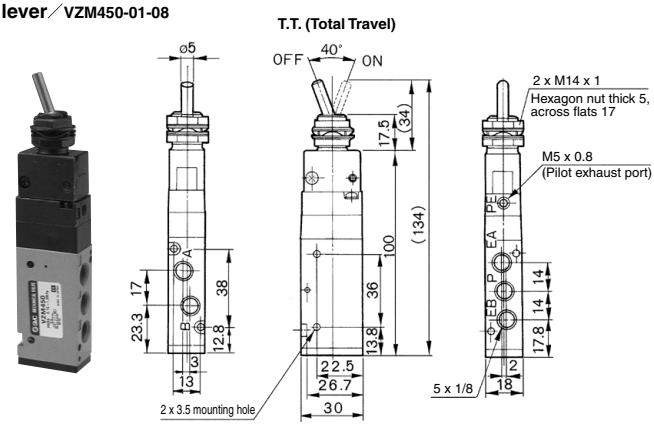
Symbol



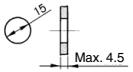
∗ 0.5 MPa supply

F.O.F. ∗	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

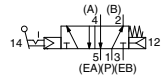
Toggle lever / VZM450-01-08



Panel mounting hole



Symbol

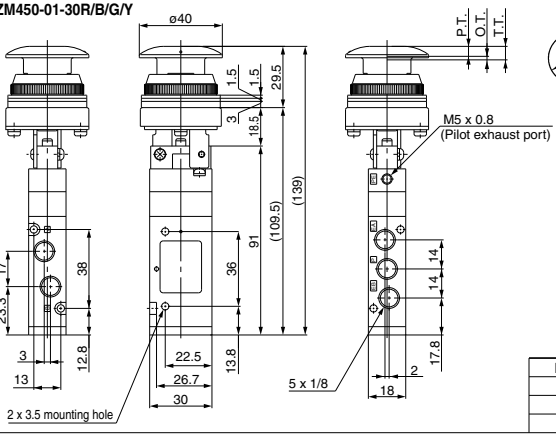


∗ 0.5 MPa supply

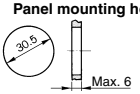
F.O.F. ∗	15 N
T.T.	40°

Series VZM400

Push button (Mushroom) / VZM450-01-30R/B/G/Y



Panel mounting hole



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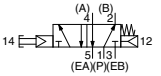
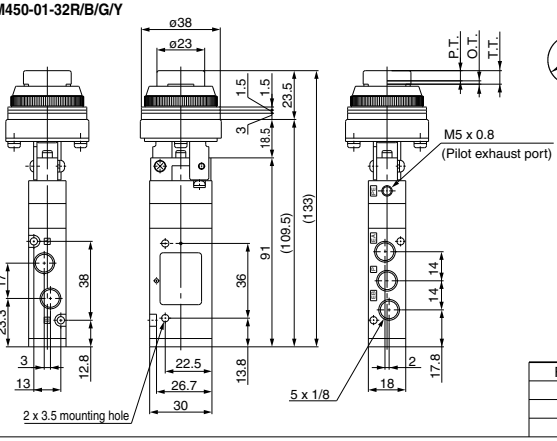


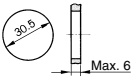
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

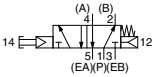
Push button (Extended) / VZM450-01-32R/B/G/Y



Panel mounting hole



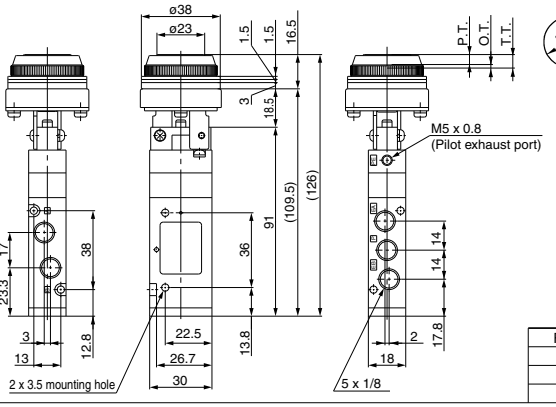
Symbol



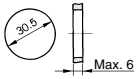
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

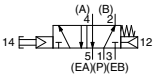
Push button (Flush) / VZM450-01-33



Panel mounting hole



Symbol

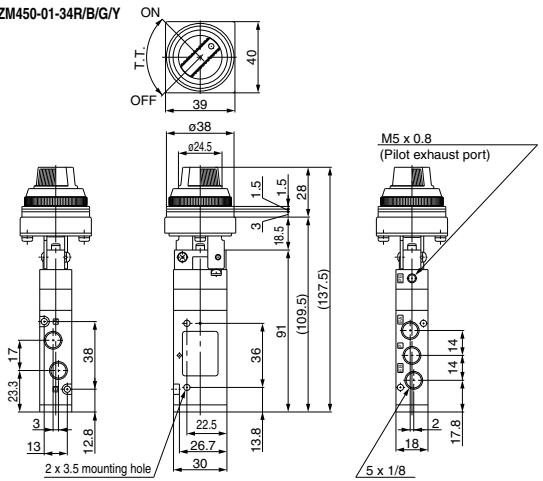


∗ 0.5 MPa supply

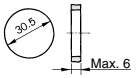
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VZM400

Twist selector (2 position) / VZM450-01-34R/B/G/Y



Panel mounting hole



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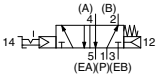
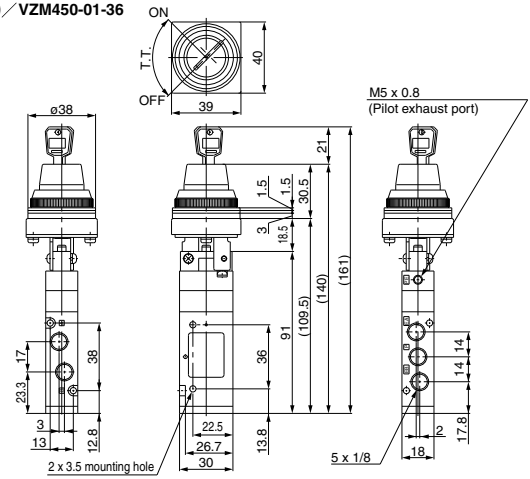


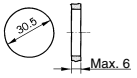
∗ 0.5 MPa supply

F.O.F. ∗	23 N
T.T.	90°

Key selector (2 position) / VZM450-01-36



Panel mounting hole



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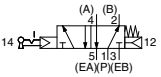
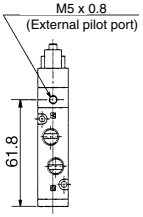


∗ 0.5 MPa supply

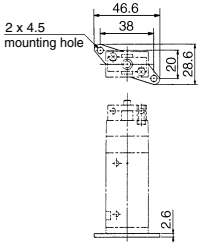
F.O.F. ∗	26 N
T.T.	90°

Key can be removed at the "on" and "off" positions.

External pilot type
VZM451 type



With foot bracket
VZM450-01-□□-F



5 Port Mechanical Valve
Rubber Seal
Series VZM500

RoHS

Compact design, large flow capacity
High cycle rate, long life/300 c.p.m. or less

Piping possible to any EXH port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Pilot type is selectable. (Internal pilot and external pilot)

Foot bracket and manifold mounting possible.

PAT.PEND.

Specifications

Fluid		Air/Inert gas		
Operating pressure		0.15 to 0.7 MPa (1)		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(P)→2(B)/4(A)	2.2	0.36	0.58
	2(B)/4(A)→4(R2)/5(R1)	2.4	0.34	0.63
Maximum frequency (Mechanical operation type)		300 c.p.m. or less		
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size		Main valve/1⁄8		
		Pilot valve (EXH)/M5 x 0.8		
Option		Foot bracket (2)		

∗ Please contact SMC for manifold mounting style.
Note 1) External pilot type Main valve: 0 to 0.7 MPa
Pilot valve: 0.15 to 0.7 MPa
Note 2) The standard body can not be retrofitted with a foot bracket.

Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VZM550-01-00	—	—	110
	Roller lever	VZM550-01-01	VM-01C	Polyacetal roller	140
		VZM550-01-01S	VM-01CS	Hard steel roller	150
	One way roller lever	VZM550-01-02	VM-02C	Polyacetal roller	150
		VZM550-01-02S	VM-02CS	Hard steel roller	160
	Straight plunger	VZM550-01-05	VM-05C	—	180
	Roller plunger	VZM550-01-06	VM-06C	Polyacetal roller	180
		VZM550-01-06S	VM-06CS	Hard steel roller	180
Manual operation	Toggle lever	VZM550-01-08	VM-08C	—	170
	Push button (Mushroom)	VZM550-01-30R	VM-30CR	Red	179
		VZM550-01-30B	VM-30CB	Black	
		VZM550-01-30G	VM-30CG	Green	
		VZM550-01-30Y	VM-30CY	Yellow	
	Push button (Extended)	VZM550-01-32R	VM-32CR	Red	172
		VZM550-01-32B	VM-32CB	Black	
		VZM550-01-32G	VM-32CG	Green	
		VZM550-01-32Y	VM-32CY	Yellow	
	Push button (Flush)	VZM550-01-33	VM-33C	With a set of red, black, green, yellow	177
	Twist selector (2 position)	VZM550-01-34R	VM-34CR	Red	178
		VZM550-01-34B	VM-34CB	Black	
		VZM550-01-34G	VM-34CG	Green	
		VZM550-01-34Y	VM-34CY	Yellow	
	Key selector (2 position)	VZM550-01-36	VM-36C	—	197
	Push-pull	VZM550-01-37	—	Black	170

Note 1) Actuator replacement is available for all types. (Except push-pull)
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VZM55 [0] – [01] – [01] [S] – [ ] – [ ]

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Option

F	Foot bracket

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)
37	Push-pull

Port size

01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

Body option

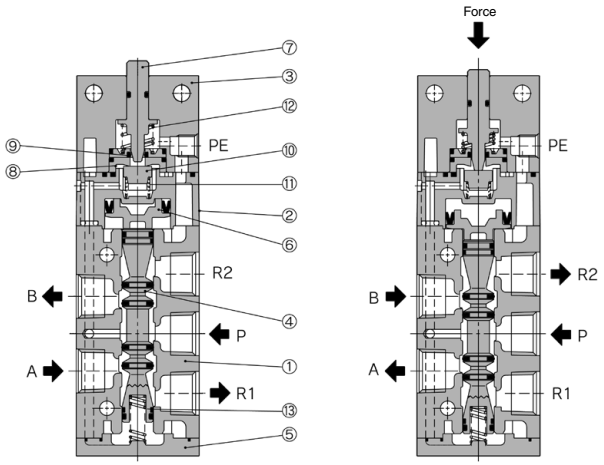
0	Standard
1 *	External pilot type

* Except VZM550-01-37

Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated **Actuated**



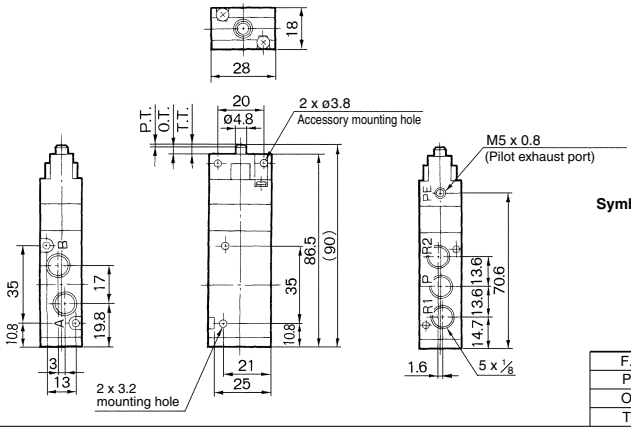
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Pilot body**	PBT	ZDC only for external pilot type
3	**Head cover**	ZDC	Black zinc chromated
4	**Spool valve assembly**		
5	**End cover**	ZDC	Matt-black
6	**Piston**	POM	
7	**Plunger**	POM	

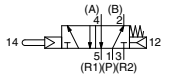
No.	Description	Material	Note
8	**Valve seat (A)**	POM	
9	**Valve seat (B)**	POM	
10	**Valve assembly**	NBR	
11	**Valve spring**	Stainless steel	
12	**Return spring**	Stainless steel	
13	**Spool spring**	Stainless steel	

Series VZM500

Basic
VZM550-01-00



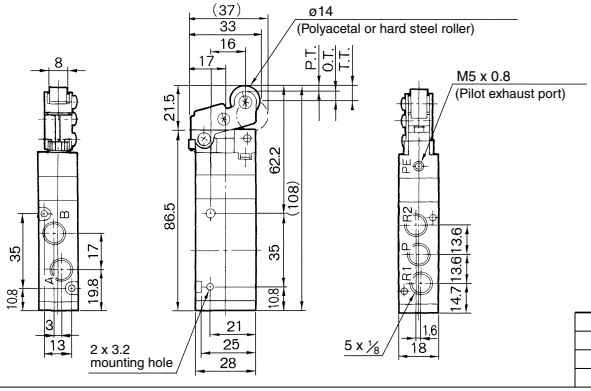
Symbol



∗ 0.5 MPa supply

F.O.F. ∗	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever
VZM550-01-01
VZM550-01-01S



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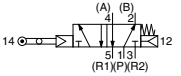
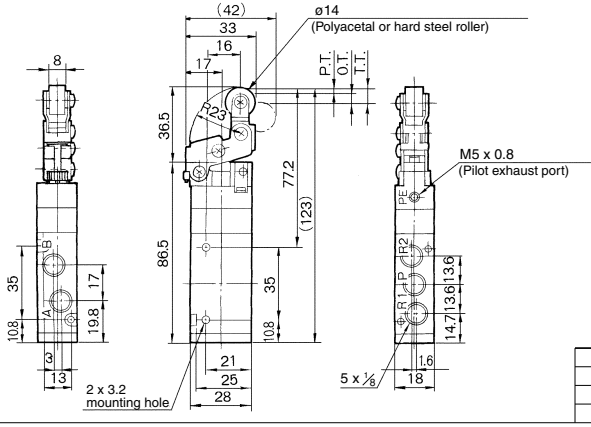


∗ 0.5 MPa supply

F.O.F. ∗	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever
VZM550-01-02
VZM550-01-02S



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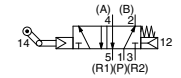
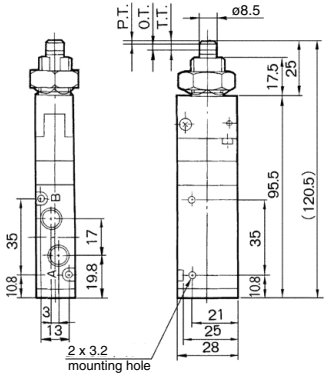


∗ 0.5 MPa supply

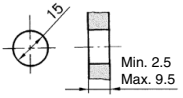
F.O.F. ∗	7 N
P.T.	2.4 mm
O.T.	4.6 mm
T.T.	7.0 mm

Series VZM500

Straight plunger
VZM550-01-05



Panel mounting hole



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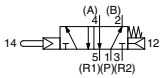
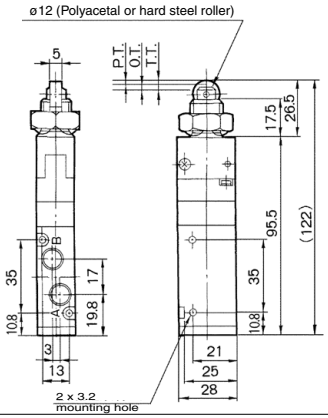


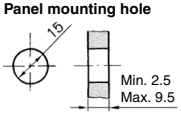
∗ 0.5 MPa supply

F.O.F. ∗	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Roller plunger
VZM550-01-06
VZM550-01-06S



Panel mounting hole



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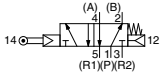
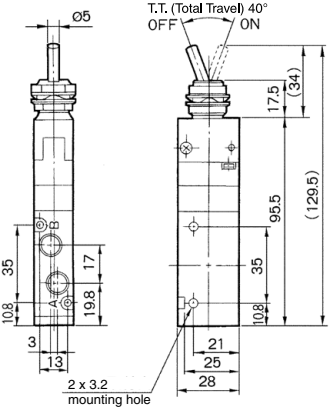


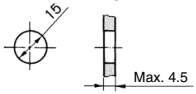
∗ 0.5 MPa supply

F.O.F. ∗	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Toggle lever
VZM550-01-08



Panel mounting hole



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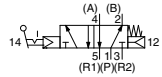


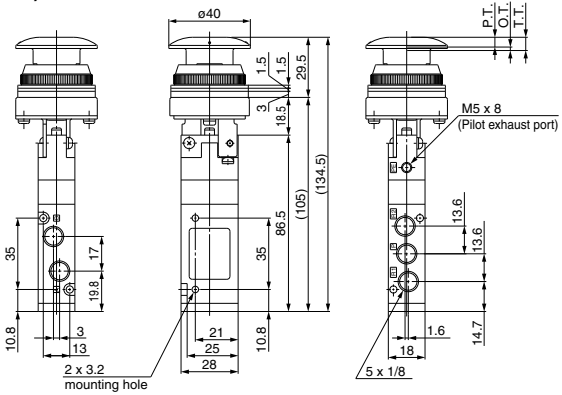
∗ 0.5 MPa supply

F.O.F. ∗	15 N
T.T.	40°

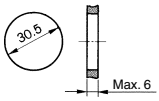
Series VZM500

Push button (Mushroom)

VZM550-01-30R/B/G/Y



Panel mounting hole



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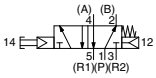
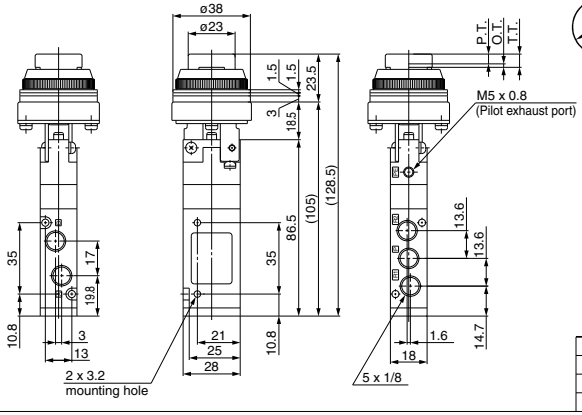


∗ 0.5 MPa supply

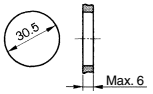
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Extended)

VZM550-01-32R/B/G/Y



Panel mounting hole



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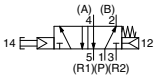
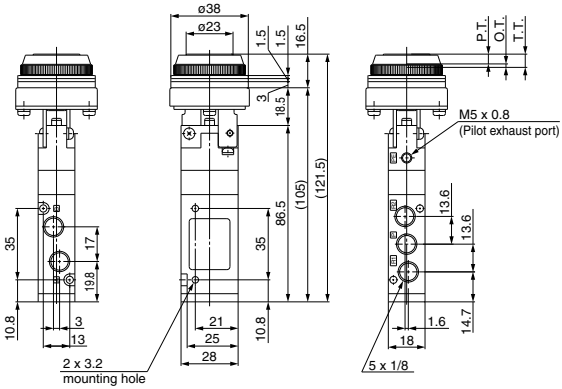


∗ 0.5 MPa supply

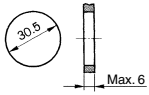
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)

VZM550-01-33



Panel mounting hole



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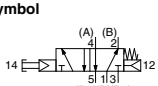
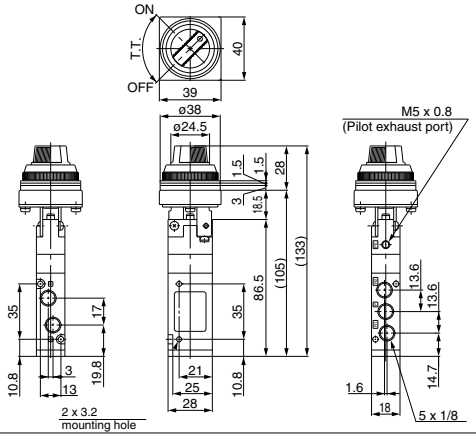


∗ 0.5 MPa supply

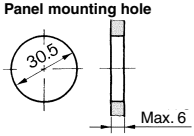
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VZM500

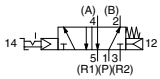
Selector (2 position)
VZM550-01-34R/B/G/Y



Panel mounting hole



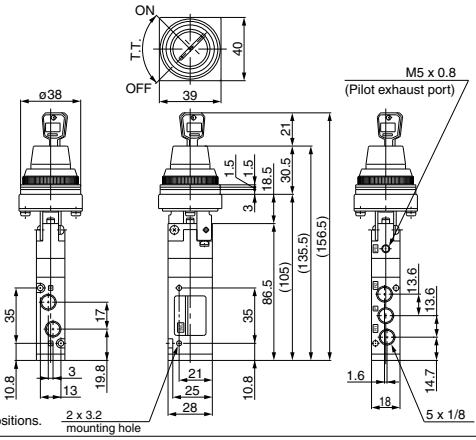
Symbol



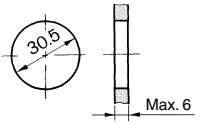
∗ 0.5 MPa supply

F.O.F. ∗	23 N
T.T.	90°

Key selector (2 position)
VZM550-01-36



Panel mounting hole



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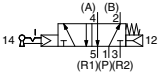
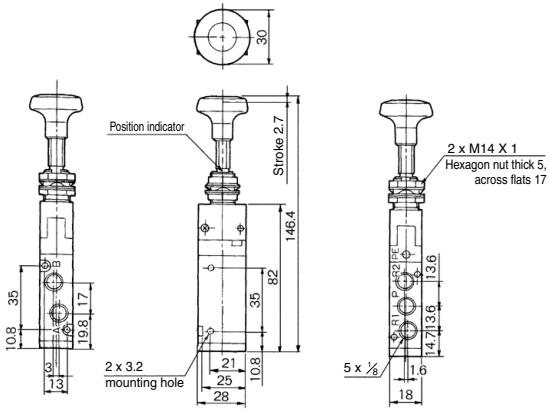


∗ 0.5 MPa supply

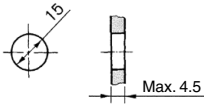
F.O.F. ∗	26 N
T.T.	90°

Key can be removed at the “on” and “off” positions.

Push pull
VZM550-01-37



Panel mounting hole



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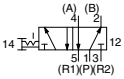
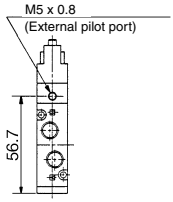
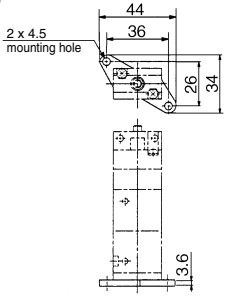


F.O.F.	20 N
T.T.	2.7 mm

External pilot type
VZM551 type



With foot bracket
VZM55□-01-□□-F



5 Port Mechanical Valve
Rubber Seal
Series VFM300

RoHS

Compact design, large flow capacity
High cycle rate, long life/300 c.p.m. or less

Piping possible to any EXH port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Pilot type is selectable. (Internal pilot and external pilot)

Specifications

Fluid		Air/Inert gas		
Operating pressure		0.15 to 0.9 MPa (1)		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(P)→2(C2)/4(C1)	4.0	0.36	1.0
	2(C2)/4(C1)→3(E2)/5(E1)	3.1	0.32	0.75
Maximum frequency (Mechanical operation type)		300 c.p.m. or less		
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size		Main valve/SUP, CYL port 1/4, EXH port 1/8		
		Pilot valve (EXH)/M5 x 0.8		
Option		Foot bracket (2)		

Note 1) External pilot type Main valve: 0 to 0.9 MPa
Pilot valve: 0.15 to 0.9 MPa
Note 2) The standard body can not be retrofitted with a foot bracket.

Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VFM350-02-00	—	—	190
	Roller lever	VFM350-02-01	VM-01C	Polyacetal roller	270
		VFM350-02-01S	VM-01CS	Hard steel roller	280
	One way roller lever	VFM350-02-02	VM-02C	Polyacetal roller	280
		VFM350-02-02S	VM-02CS	Hard steel roller	290
	Straight plunger	VFM350-02-05	VM-05D	—	380
	Roller plunger	VFM350-02-06	VM-06D	Polyacetal roller	370
		VFM350-02-06S	VM-06DS	Hard steel roller	380
Manual operation	Toggle lever	VFM350-02-08	VM-08D	—	360
	Push button (Mushroom)	VFM350-02-30R	VM-30CR	Red	309
		VFM350-02-30B	VM-30CB	Black	
		VFM350-02-30G	VM-30CG	Green	
		VFM350-02-30Y	VM-30CY	Yellow	
	Push button (Extended)	VFM350-02-32R	VM-32CR	Red	302
		VFM350-02-32B	VM-32CB	Black	
		VFM350-02-32G	VM-32CG	Green	
		VFM350-02-32Y	VM-32CY	Yellow	
	Push button (Flush)	VFM350-02-33	VM-33C	With a set of red, black, green, yellow	307
	Twist selector (2 position)	VFM350-02-34R	VM-34CR	Red	308
		VFM350-02-34B	VM-34CB	Black	
		VFM350-02-34G	VM-34CG	Green	
		VFM350-02-34Y	VM-34CY	Yellow	
	Key selector (2 position)	VFM350-02-36	VM-36C	—	327

Note 1) Actuator replacement is available for all types.
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VFM35 [0] – [02] – [01] [S] – [ ] – [ ]

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Option

F	Foot bracket (Only internal pilot)

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)

Port size

02	Rc 1/4
N02	NPT 1/4
F02	G 1/4

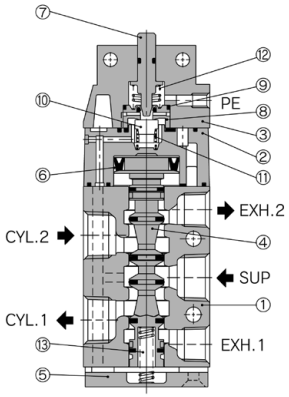
Body option

0	Internal pilot type
1	External pilot type

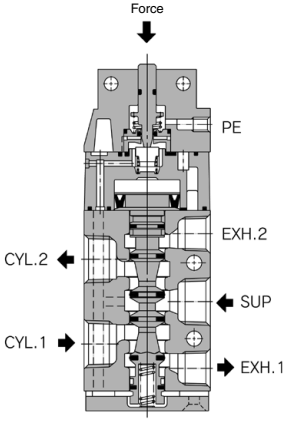
Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated



Actuated



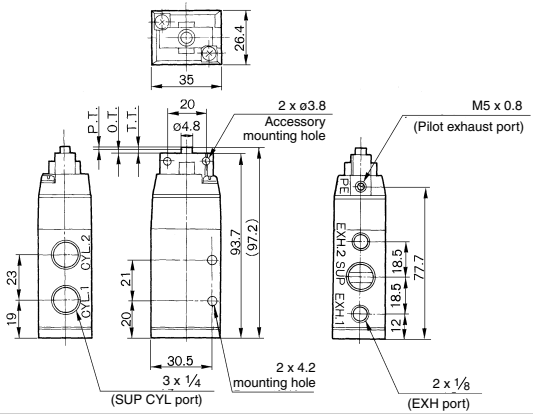
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Pilot body**	PBT	ZDC only for external pilot type
3	**Head cover**	ZDC	Black zinc chromated
4	**Spool valve assembly**		
5	**End cover**	ADC	Matt-black
6	**Piston**	POM	
7	**Plunger**	POM	

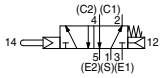
No.	Description	Material	Note
8	**Valve seat (A)**	POM	
9	**Valve seat (B)**	POM	
10	**Valve**	NBR	
11	**Valve spring**	Stainless steel	
12	**Return spring**	Stainless steel	
13	**Spool spring**	Stainless steel	

Series VFM300

Basic
VFM350-02-00



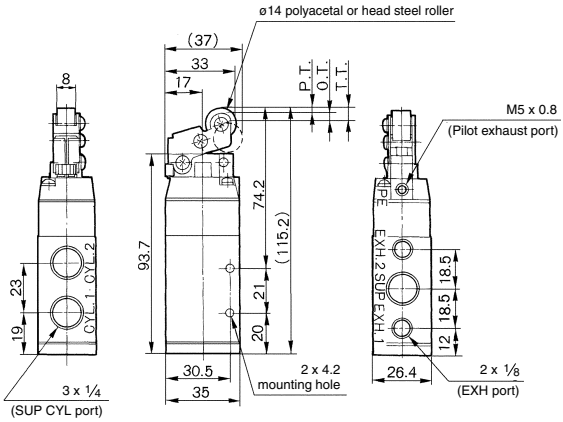
Symbol



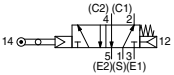
∗ 0.5 MPa supply

F.O.F. ∗	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever
VFM350-02-01
VFM350-02-01S



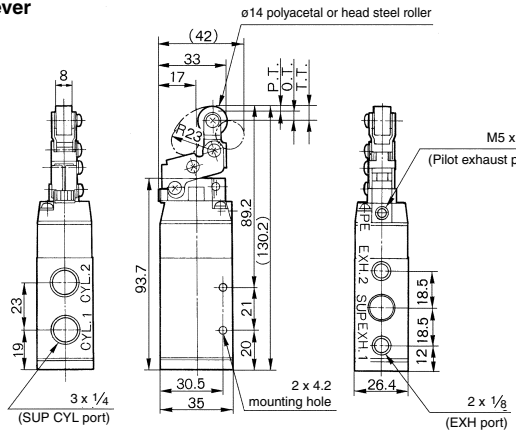
Symbol



∗ 0.5 MPa supply

F.O.F. ∗	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever
VFM350-02-02
VFM350-02-02S



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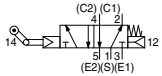
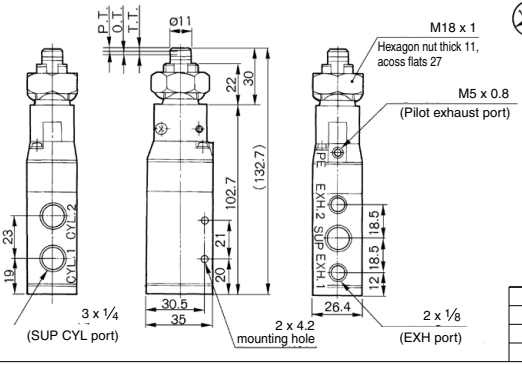


∗ 0.5 MPa supply

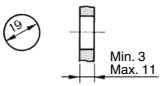
F.O.F. ∗	7 N
P.T.	2.4 mm
O.T.	4.6 mm
T.T.	7.0 mm

Series VFM300

Straight plunger
VFM350-02-05



Panel mounting hole



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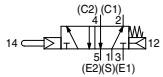
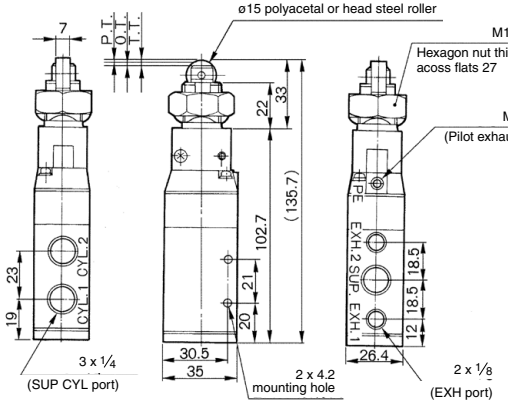


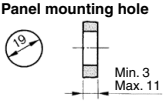
∗ 0.5 MPa supply

F.O.F. ∗	20 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

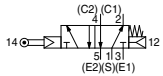
Roller plunger
VFM350-02-06
VFM350-02-06S



Panel mounting hole



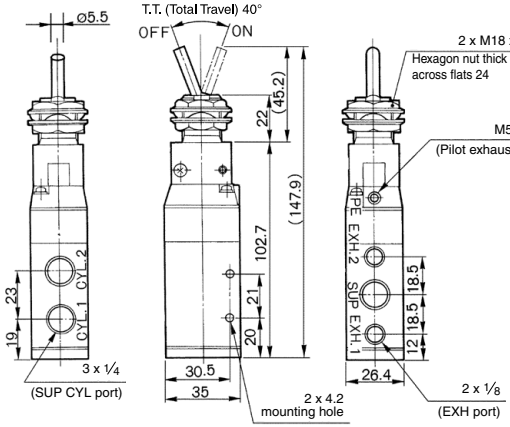
Symbol



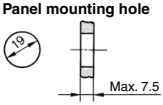
∗ 0.5 MPa supply

F.O.F. ∗	20 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

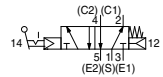
Toggle lever
VFM350-02-08



Panel mounting hole



Symbol

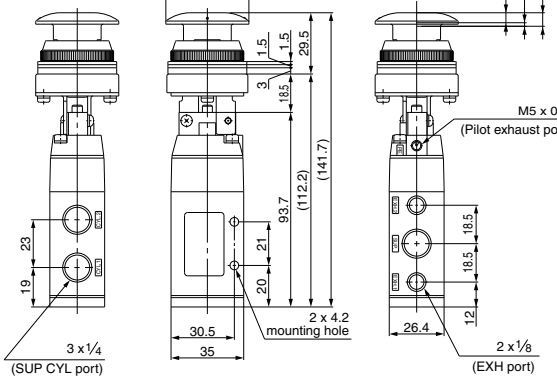


∗ 0.5 MPa supply

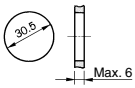
F.O.F. ∗	15 N
T.T.	40°

Series VFM300

Push button (Mushroom)
VFM350-02-30R/B/G/Y



Panel mounting hole



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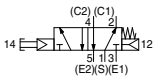
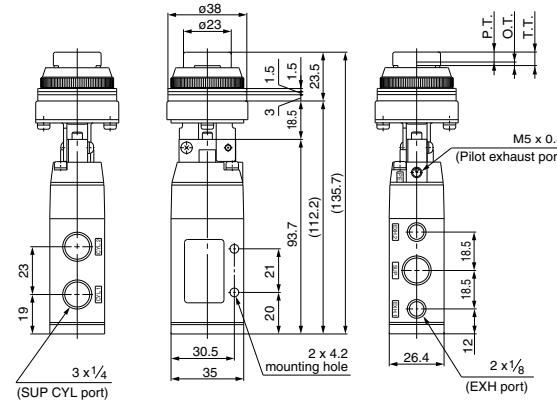


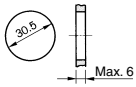
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Extended)
VFM350-02-32R/B/G/Y



Panel mounting hole



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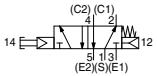
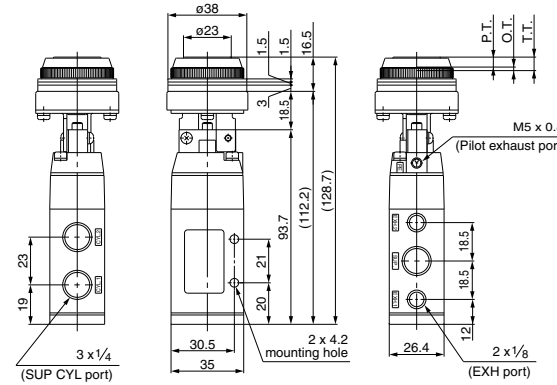


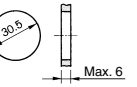
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)
VFM350-02-33



Panel mounting hole



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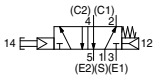
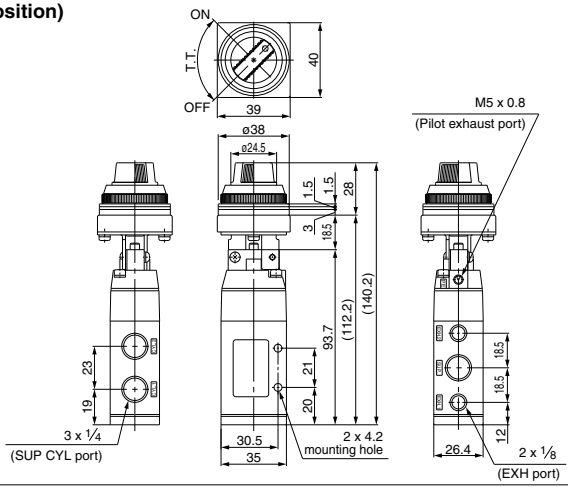


∗ 0.5 MPa supply

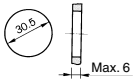
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VFM300

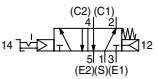
Twist selector (2 position)
VFM350-02-34R/B/G/Y



Panel mounting hole



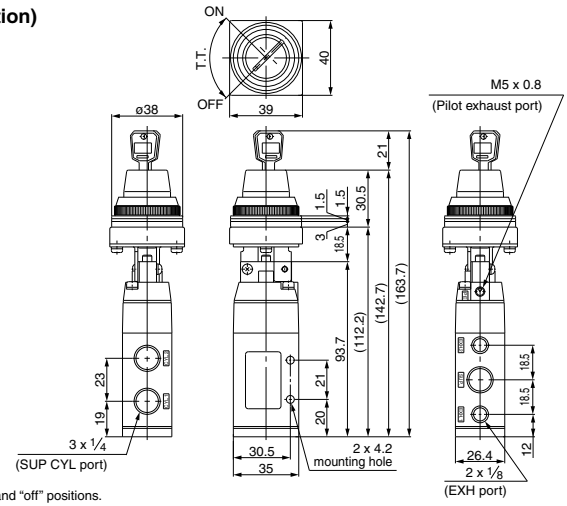
Symbol



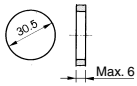
∗ 0.5 MPa supply

F.O.F. ∗	23 N
T.T.	90°

Key selector (2 position)
VFM350-02-36



Panel mounting hole



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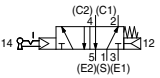
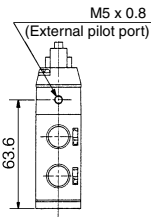


∗ 0.5 MPa supply

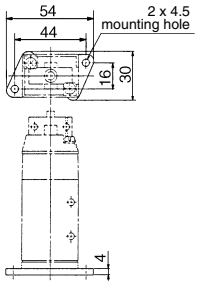
F.O.F. ∗	26 N
T.T.	90°

Key can be removed at the “on” and “off” positions.

External pilot type
VFM351 type



With foot bracket
VFM350-02-□□-F



5 Port Mechanical Valve
Metal Seal
Series VFM200

RoHS

Compact design, large flow capacity
High cycle rate, long life/300 c.p.m. or less

Piping possible to any EXH port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Pilot type is selectable. (Internal pilot and external pilot)

Specifications

Fluid		Air/Inert gas		
Operating pressure		0.1 to 1.0 MPa (1)		
Ambient and fluid temperature		–5 to 60°C (No freezing)		
Flow characteristics		C[dm³/(s·bar)]	b	Cv
	1(P)→2(B)/4(A)	4.0	0.2	0.9
	2(B)/4(A)→4(EB)/5(EA)	3.5	0.32	0.85
Maximum frequency (Mechanical operation type)		300 c.p.m. or less		
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Port size		Main valve Rc 1/4		
		Pilot valve (EXH)/M5 x 0.8		
Option		Foot bracket (2)		

Note 1) External pilot type Main valve: 0 to 1.0 MPa
Pilot valve: 0.1 to 1.0 MPa
Note 2) The bracket can not be retrofitted later.

Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VFM250-02-00	—	—	300
	Roller lever	VFM250-02-01	VM-01C	Polyacetal roller	310
		VFM250-02-01S	VM-01CS	Hard steel roller	320
	One way roller lever	VFM250-02-02	VM-02C	Polyacetal roller	320
		VFM250-02-02S	VM-02CS	Hard steel roller	330
	Straight plunger	VFM250-02-05	VM-05D	—	420
	Roller plunger	VFM250-02-06	VM-06D	Polyacetal roller	410
		VFM250-02-06S	VM-06DS	Hard steel roller	420
Manual operation	Toggle lever	VFM250-02-08	VM-08D	—	400
	Push button (Mushroom)	VFM250-02-30R	VM-30CR	Red	349
		VFM250-02-30B	VM-30CB	Black	
		VFM250-02-30G	VM-30CG	Green	
		VFM250-02-30Y	VM-30CY	Yellow	
	Push button (Extended)	VFM250-02-32R	VM-32CR	Red	342
		VFM250-02-32B	VM-32CB	Black	
		VFM250-02-32G	VM-32CG	Green	
		VFM250-02-32Y	VM-32CY	Yellow	
	Push button (Flush)	VFM250-02-33	VM-33C	With a set of red, black, green, yellow	347
	Twist selector (2 position)	VFM250-02-34R	VM-34CR	Red	348
		VFM250-02-34B	VM-34CB	Black	
		VFM250-02-34G	VM-34CG	Green	
		VFM250-02-34Y	VM-34CY	Yellow	
	Key selector (2 position)	VFM250-02-36	VM-36C	—	367

Note 1) Actuator replacement is available for all types.
Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 2347 and 2348. The other parts are not replaceable.
Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VFM25 [0] – [02] – [01] [S] – [ ] – [ ]

Made to Order
(Refer to pages 2342 to 2345 for details.)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Option

F	Foot bracket (Only internal pilot)

Suffix for actuator

S	Hard steel roller	
R	Red	Color of push button selector
B	Black	
G	Green	
Y	Yellow	

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	Roller plunger
08	Toggle lever
30	Push button (Mushroom)
32	Push button (Extended)
33	Push button (Flush) Note 1)
34	Twist selector (2 position)
36	Key selector (2 position)

Port size

02	Rc 1/4

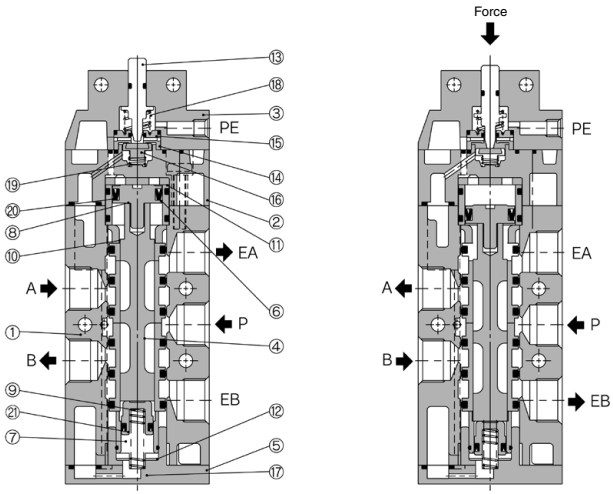
Body option

0	Internal pilot type
1	External pilot type

Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated **Actuated**



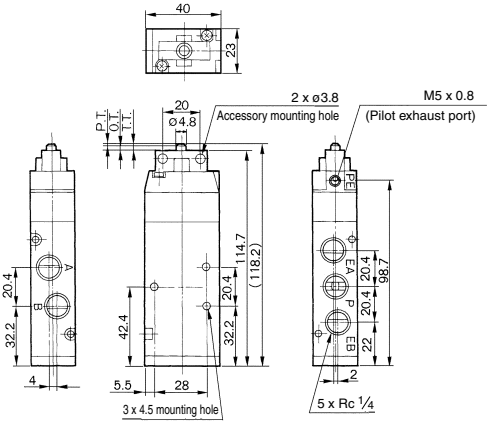
Component Parts

No.	Description	Material	Note
1	**Body**	ADC	Platinum silver
2	**Pilot body**	ZDC	Platinum silver
3	**Head cover**	ZDC	Black zinc chromated
4	**Spool/sleeve**	Stainless steel	
5	**End cover**	POM	
6	**Piston guide**	Brass	
7	**Piston guide for end cover**	Brass	
8	**Piston**	POM	
9	**Piston for end cover**	POM	
10	**Guide bushing**	POM	
11	**Cushion**	Urethane rubber	

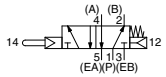
No.	Description	Material	Note
12	**Cushion for end cover**	Urethane rubber	
13	**Plunger**	Stainless steel	
14	**Valve seat (A)**	POM	
15	**Valve seat (B)**	POM	
16	**Valve**	NBR	
17	**Return spring**	Stainless steel	
18	**Return spring**	Stainless steel	
19	**Valve spring**	Stainless steel	
20	**Mini Y packing**	NBR	
21	**Mini Y packing**	NBR	

Series VFM200

Basic
VFM250-02-00



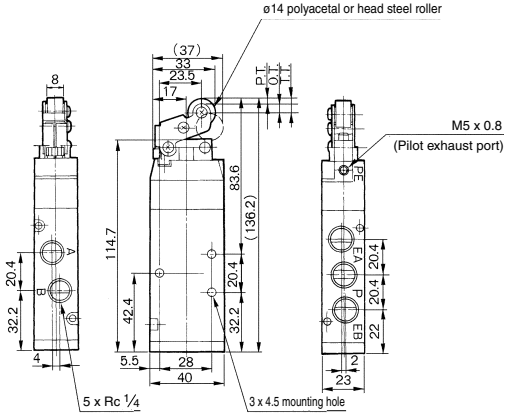
Symbol



∗ 0.5 MPa supply

F.O.F. ∗	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever
VFM250-02-01
VFM250-02-01S



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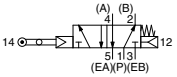
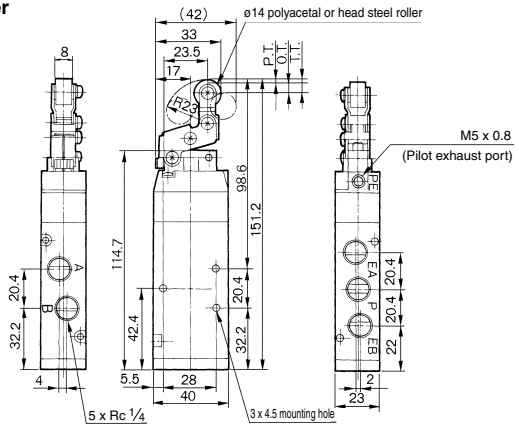


∗ 0.5 MPa supply

F.O.F. ∗	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever
VFM250-02-02
VFM250-02-02S



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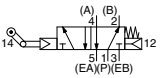
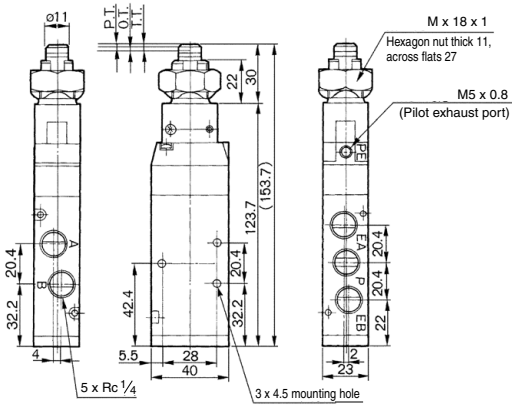


∗ 0.5 MPa supply

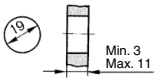
F.O.F. ∗	7 N
P.T.	2.4 mm
O.T.	4.6 mm
T.T.	7.0 mm

Series VFM200

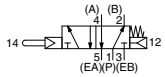
Straight plunger
VFM250-02-05



Panel mounting hole



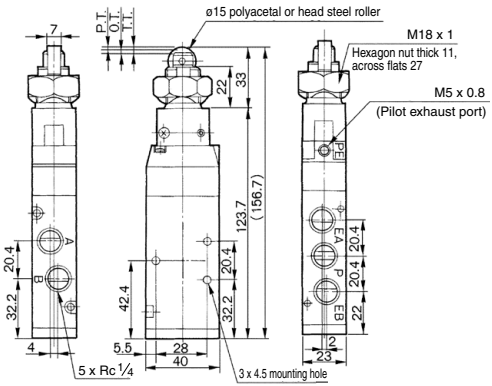
Symbol



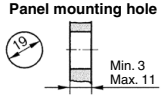
∗ 0.5 MPa supply

F.O.F. ∗	20 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

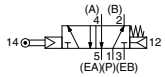
Roller plunger
VFM250-02-06
VFM250-02-06S



Panel mounting hole



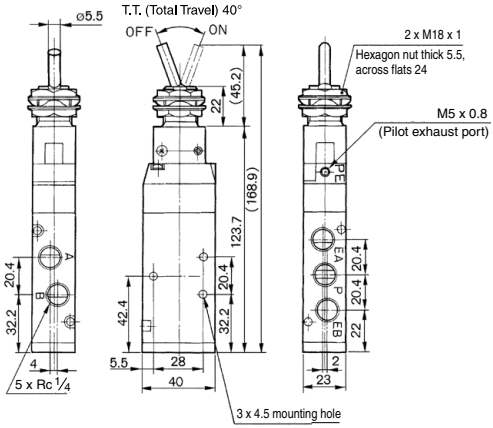
Symbol



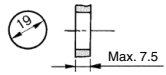
∗ 0.5 MPa supply

F.O.F. ∗	20 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

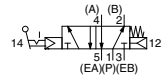
Toggle lever
VFM250-02-08



Panel mounting hole



Symbol

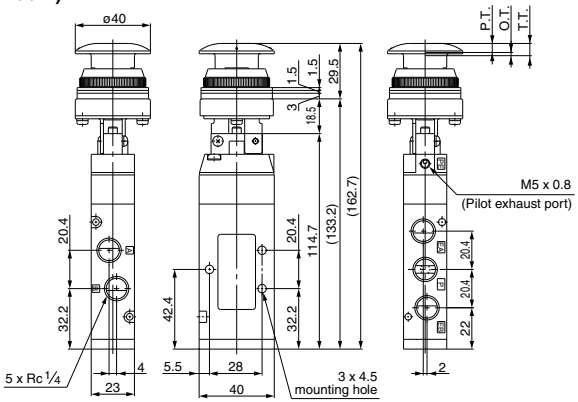


∗ 0.5 MPa supply

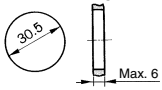
F.O.F. ∗	15 N
T.T.	40°

Series VFM200

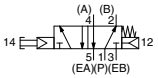
Push button (Mushroom)
VFM250-02-30R/B/G/Y



Panel mounting hole



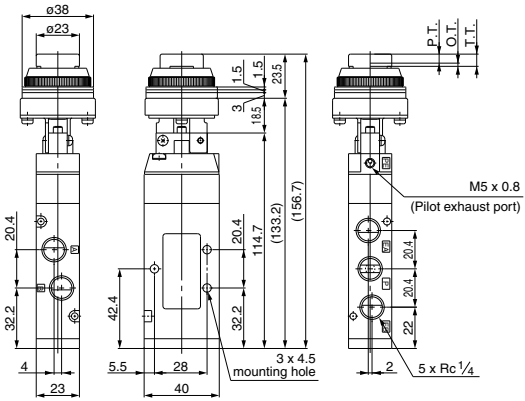
Symbol



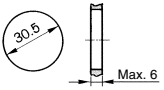
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

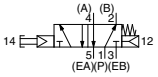
Push button (Extended)
VFM250-02-32R/B/G/Y



Panel mounting hole



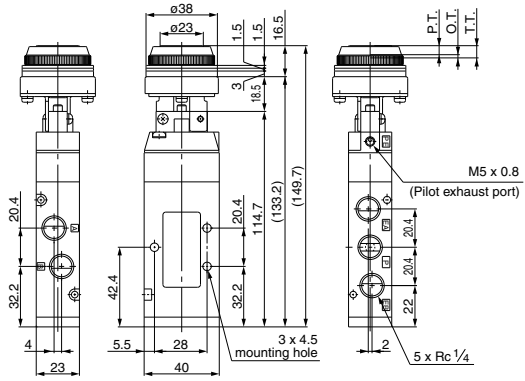
Symbol



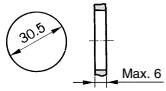
∗ 0.5 MPa supply

F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

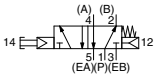
Push button (Flush)
VFM250-02-33



Panel mounting hole



Symbol

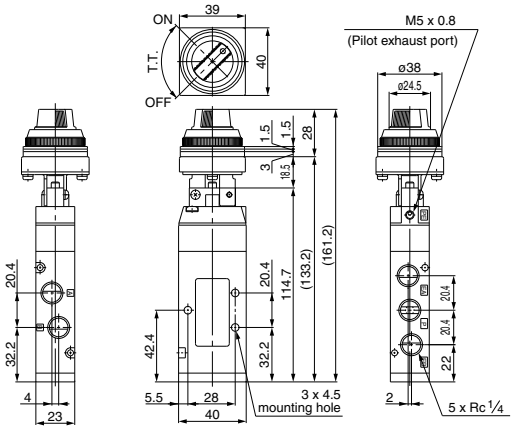


∗ 0.5 MPa supply

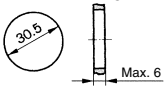
F.O.F. ∗	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VFM200

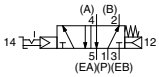
Twist selector (2 position)
VFM250-02-34R/B/G/Y



Panel mounting hole



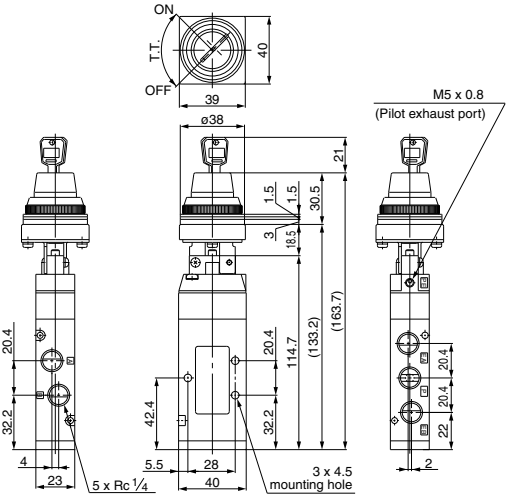
Symbol



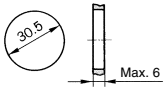
∗ 0.5 MPa supply

F.O.F. ∗	23 N
T.T.	90°

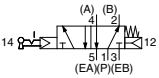
Key selector (2 position)
VFM250-02-36



Panel mounting hole



Symbol

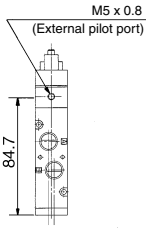


∗ 0.5 MPa supply

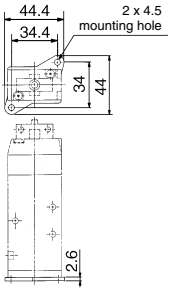
F.O.F. ∗	26 N
T.T.	90°

Key can be removed at the “on” and “off” positions.

External pilot type
VFM251 type



With foot bracket
VFM250-02-□□-F



Made to Order 1

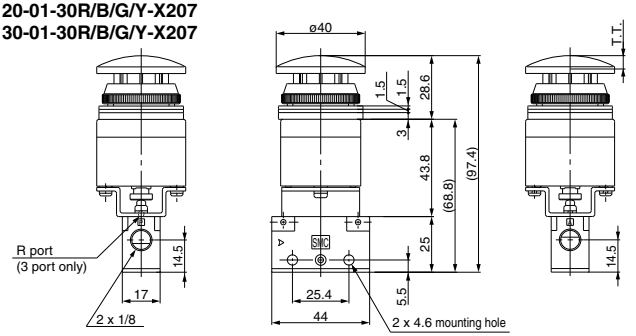
Please contact SMC for detailed specifications, dimensions and delivery.

Made to Order

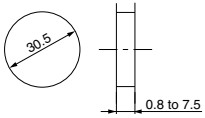
Alternate Type, Mushroom Push Button — X207

Alternate type: When pushing the push button, the valve actuates and will hold its position even after the button is released. Pushing the button again will return the button and valve to their previous position.

VM120-01-30R/B/G/Y-X207
VM130-01-30R/B/G/Y-X207

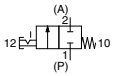


Panel mounting hole

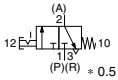


Symbol

2 port



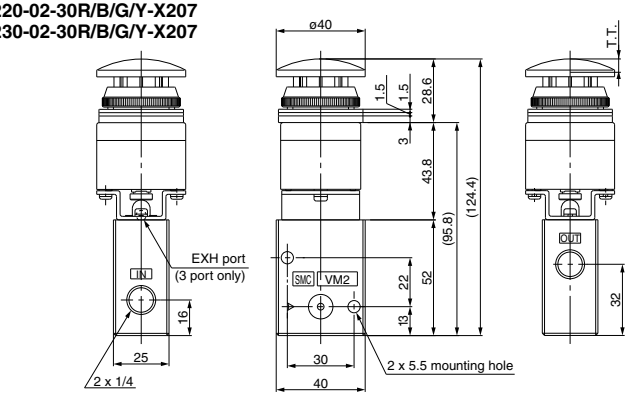
3 port



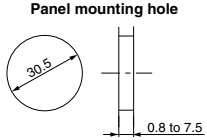
∗ 0.5 MPa supply

F.O.F. ∗	21 N
T.T.	6.7 mm

VM220-02-30R/B/G/Y-X207
VM230-02-30R/B/G/Y-X207

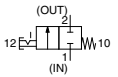


Panel mounting hole

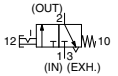


Symbol

2 port



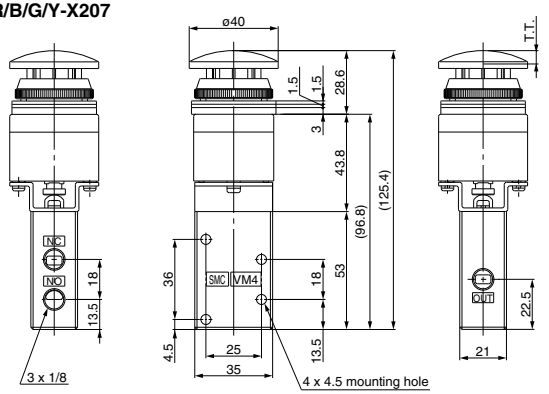
3 port



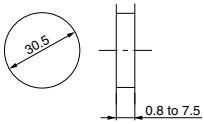
∗ 0.5 MPa supply

F.O.F. ∗	52 N
T.T.	6.7 mm

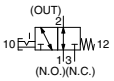
VM430-01-30R/B/G/Y-X207



Panel mounting hole



Symbol



∗ 0.5 MPa supply

F.O.F. ∗	26 N
T.T.	6.7 mm

SMC

Made to Order 2

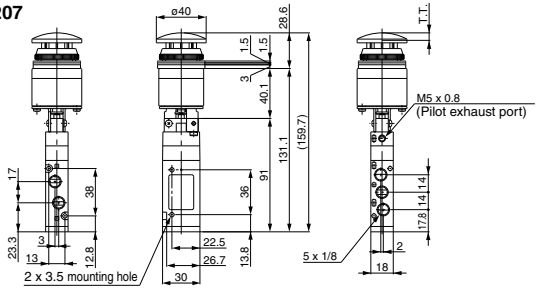
Please contact SMC for detailed specifications, dimensions and delivery.

Made to Order

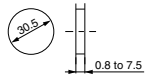
Alternate Type, Mushroom Push Button

X207

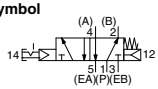
VZM450-01-30R/B/G/Y-X207



Panel mounting hole



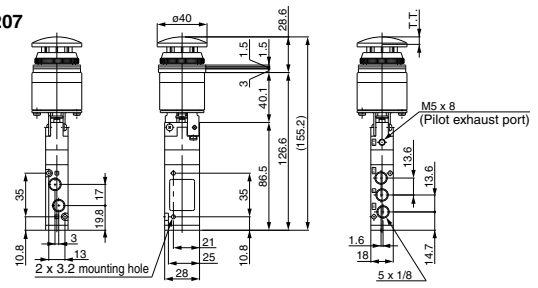
Symbol



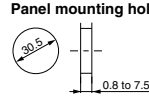
∗ 0.5 MPa supply

F.O.F. ∗	16 N
T.T.	6.7 mm

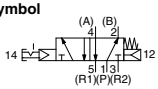
VZM550-01-30R/B/G/Y-X207



Panel mounting hole



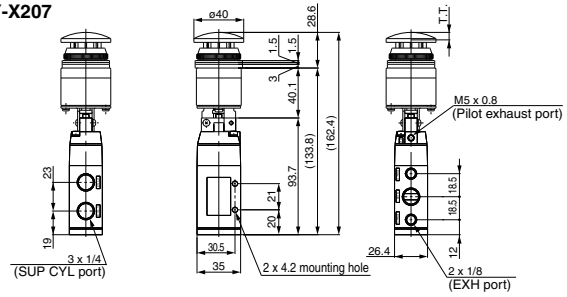
Symbol



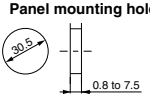
∗ 0.5 MPa supply

F.O.F. ∗	21 N
T.T.	6.7 mm

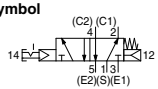
VFM350-02-30R/B/G/Y-X207



Panel mounting hole



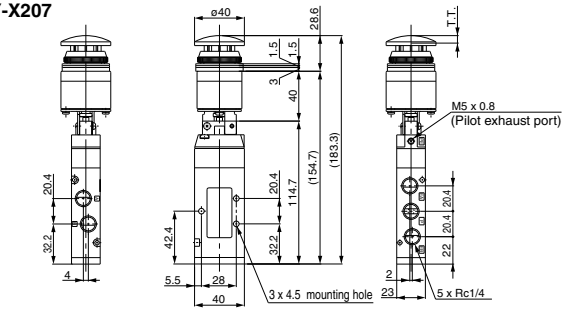
Symbol



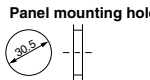
∗ 0.5 MPa supply

F.O.F. ∗	21 N
T.T.	6.7 mm

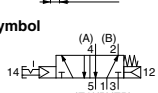
VFM250-02-30R/B/G/Y-X207



Panel mounting hole



Symbol



∗ 0.5 MPa supply

F.O.F. ∗	21 N
T.T.	6.7 mm

Made to Order 3

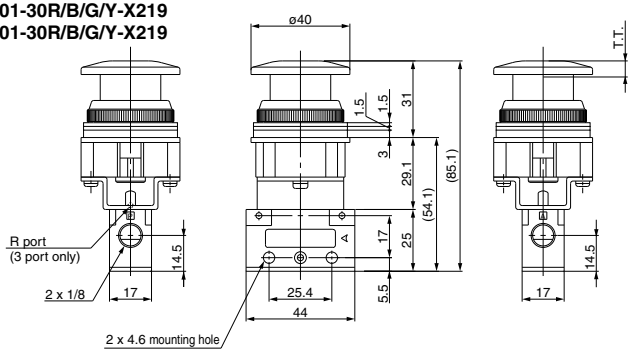
Please contact SMC for detailed specifications, dimensions and delivery.

Made to Order

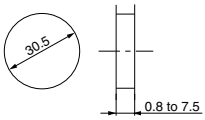
Push-lock Turn-reset Type, Mushroom Push Button — X219

Push-lock turn-reset type: When pressing the push button, it is locked in this status. Turning the button clockwise will reset it.

VM120-01-30R/B/G/Y-X219
VM130-01-30R/B/G/Y-X219

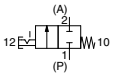


Panel mounting hole

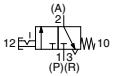


Symbol

2 port



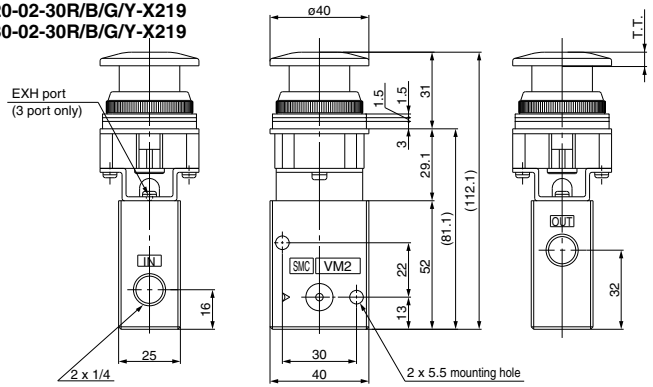
3 port



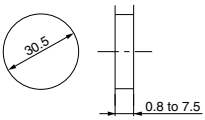
∗ 0.5 MPa supply

F.O.F. ∗	52 N
T.T.	5.8 mm

VM220-02-30R/B/G/Y-X219
VM230-02-30R/B/G/Y-X219

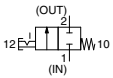


Panel mounting hole

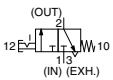


Symbol

2 port



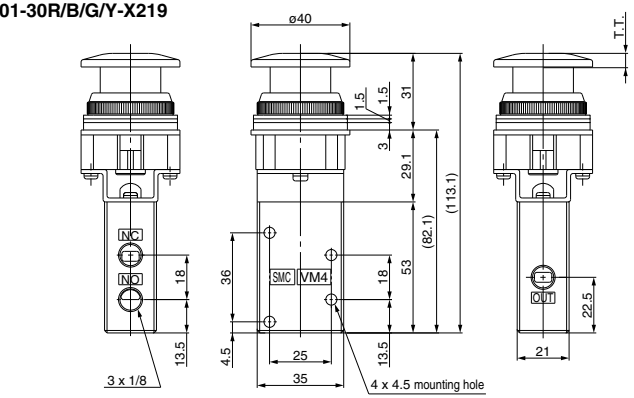
3 port



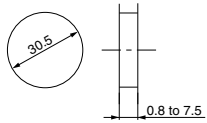
∗ 0.5 MPa supply

F.O.F. ∗	52 N
T.T.	5.8 mm

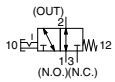
VM430-01-30R/B/G/Y-X219



Panel mounting hole



Symbol



∗ 0.5 MPa supply

F.O.F. ∗	26 N
T.T.	5.8 mm

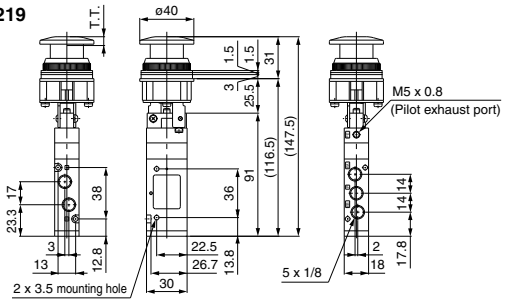
Made to Order 4

Please contact SMC for detailed specifications, dimensions and delivery.

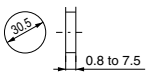
Made to Order

Push-lock Turn-reset Type, Mushroom Push Button — X219

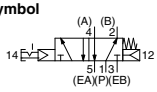
VZM450-01-30R/B/G/Y-X219



Panel mounting hole



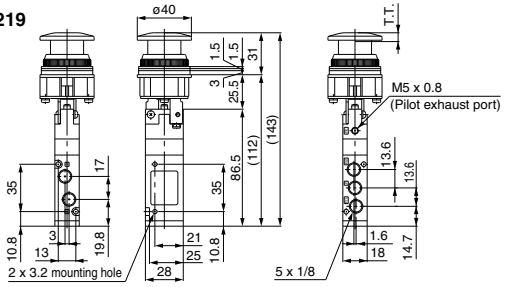
Symbol



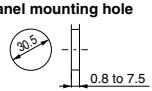
∗ 0.5 MPa supply

F.O.F. *	21 N
T.T.	5.8 mm

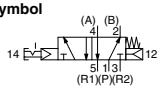
VZM550-01-30R/B/G/Y-X219



Panel mounting hole



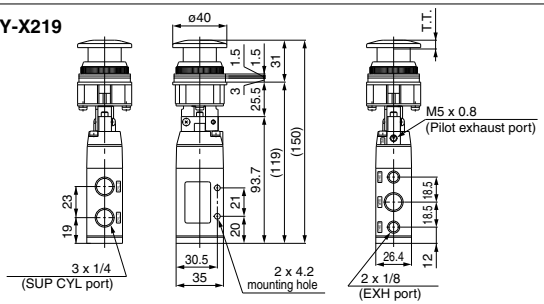
Symbol



∗ 0.5 MPa supply

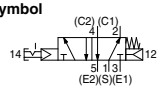
F.O.F. *	21 N
T.T.	5.8 mm

VFM350-02-30R/B/G/Y-X219



Panel mounting hole

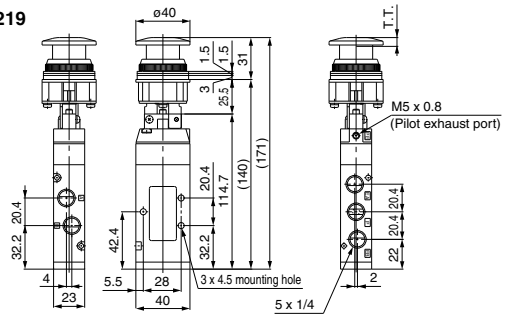
Symbol



∗ 0.5 MPa supply

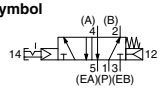
F.O.F. *	21 N
T.T.	5.8 mm

VFM250-02-30R/B/G/Y-X219



Panel mounting hole

Symbol



∗ 0.5 MPa supply

F.O.F. *	21 N
T.T.	5.8 mm

Series VM
Specific Product Precautions 1

Be sure to read before handling.
Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

Mounting

⚠Warning

1. Conditions for mechanical operation

Do not move the mechanical operation beyond the operating limit position, as this could damage the mechanical valve itself and lead to equipment malfunction.

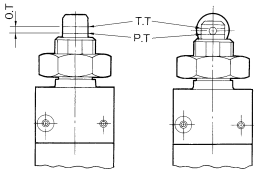
- **Actuator stroke**

Operate the mechanism within the stroke range that has been obtained through the formula given below. (Do not move beyond the operating limit position.)

Operating stroke: (P.T. + 0.5 x O.T.) to (P.T. + O.T. – 0.1)

Series	Actuator		Actuator stroke (mm)
VM1000	Basic	T.T. = 4.8 mm (T.T. = 2.5 mm)	3.7 to 4.7 (2.2 to 2.4)
	Roller lever		3.5 to 4.4
	One way roller lever		3.5 to 4.4
VM100	Basic		2.2 to 2.9
	Roller lever		4.3 to 5.3
	One way roller lever		4.3 to 5.3
	Straight plunger		2.7 to 3.4
	Roller plunger		2.7 to 3.4
	Cross roller plunger		2.7 to 3.4
VM200	Basic		4.0 to 4.9
	Roller lever		8.7 to 10.7
	One way roller lever		9.5 to 11.7
	Straight plunger		4.5 to 5.4
	Roller plunger		4.5 to 5.4
	Cross roller plunger		4.5 to 5.4
VM400	Basic		2.5 to 3.4
	Roller lever		6.2 to 8.2
	One way roller lever		6.5 to 8.7
	Straight plunger		4.5 to 5.4
	Roller plunger		4.5 to 5.4
	Cross roller plunger		4.5 to 5.4
VZM500 VZM400 VFM300 VFM200	Basic		2.0 to 2.9
	Roller lever		4.2 to 6.0
	One way roller lever		4.7 to 6.7
	Straight plunger		2.5 to 3.4
	Roller plunger		2.5 to 3.4

For straight and roller plunger types, there is a groove indicating P.T. and T.T. for stroke adjustment.



Pressure Source

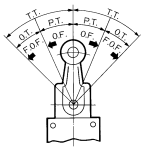
⚠Warning

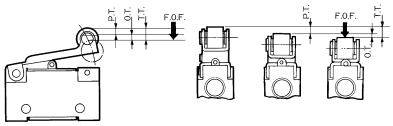
Operable fluid is either air or inert gas only. It cannot be used for corrosive gas and fluid.

⚠Caution

When using vacuum pressure for VM100, supply vacuum pressure to P port.

Definition of Symbol





F.O.F. (Full Operating Force) ·· Required force to total travel position.

P.T. (Pre-travel) ····· From free position to initial valve operating position.

O.T. (Over Travel) ····· From initial valve operating position to total travel position.

T.T. (Total Travel) ····· From free position to total travel position.

Caution

This product cannot be used for applications in which the pressure must be sealed because there will be a slight leakage. Please consult with SMC for this type of application.

Specific Product Precautions 2

Be sure to read before handling.
Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

Mounting

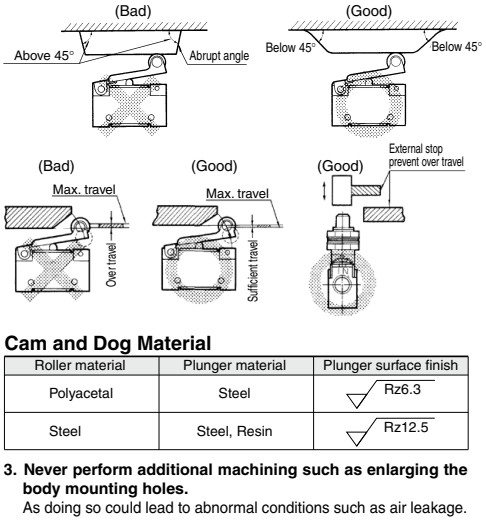
⚠Warning

2. Conditions for mechanical operation

- **Cam and dog angle and maximum speed**
  Select the angle and the maximum speed of the operating cam and the dog of the mechanism from within the selection range given in the table below.
  If they are operated beyond the selection range, the cam and the dog could apply impact shocks to the actuator, leading to damage.

Series	Actuator	Angle limit switch actuator	Max. speed limit switch actuator (m/s)
VM1000	Roller lever	30°	0.7
		45°	0.3
	One way roller lever	30°	0.7
		45°	0.3
VM100 VM200 VM400	Roller lever	30°	0.7
		45°	0.3
	One way roller lever	30°	0.7
		45°	0.3
	Straight plunger	—	0.2
	Roller plunger	30°	0.3
	Cross roller plunger	30°	0.3
VZM500 VZM400 VFM300 VFM200	Roller lever	30°	1.5
		45°	0.7
	One way roller lever	30°	0.7
		45°	0.3
	Straight plunger	—	0.4
	Roller plunger	30°	0.7
VM800	Roller lever	30°	0.5
		45°	0.2
	Adjustable roller lever	30°	0.2
		45°	0.1
	Adjustable rod lever	—	0.2

Avoid abrupt angles on limit switch actuator.



Cam and Dog Material

Roller material	Plunger material	Plunger surface finish
Polyacetal	Steel	Rz6.3
Steel	Steel, Resin	Rz12.5

3. Never perform additional machining such as enlarging the body mounting holes.
As doing so could lead to abnormal conditions such as air leakage.

4. Operate all manual valves such as the push pin types, the selector types, and the flip toggle types with your finger.
If a hammer or other tools are used, or it is operated mechanically through the use of a cylinder or the like, damage could result.

Environments

⚠Caution

1. Do not operate it in an area in which fluids such as oil, coolant, or water splash on it or dust comes in contact with it.
Because it does not have a waterproof or dustproof construction, fluids or dust could enter the valve, leading to malfunction. Therefore, take measures such as providing a protective cover to prevent direct exposure.

Maintenance

⚠Warning

1. Perform inspections on a regular basis as necessary, such as at the beginning of an operation, to make sure that the mechanical valve operates properly.
Failure to observe this precaution could lead to unsafe operation, such as unintended operation or malfunction.

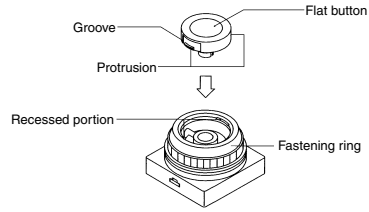
How to Change the Buttons

⚠Caution

Replace the button in the following manner to change color of the button.

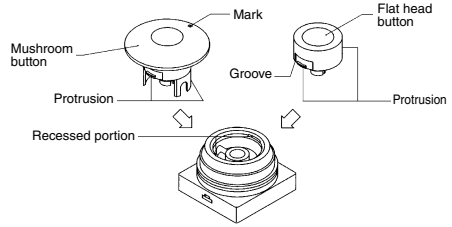
1. Push button (Flush type)

- Installation ···· Of the four colors, red, green, black, and yellow, select and align the protruding portion of the button with the recessed portion of the body and push in.
- Removal ···· Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it up.



2. Push button (Mushroom and extended types)
At the time of shipment, only 1 button of the color that you specified is attached to the body.

	Mushroom type	Extended type
Mounting	Align the protruding portion of the button with the recessed portion of the body and push in. (Use the mark on the button as a reference to align the protruding part.)	Align the protruding portion of the button with the recessed portion of the body and push in.
Removal	Placing your finger under the collar of the button on the side of the mark, tilt it upward.	Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it up.

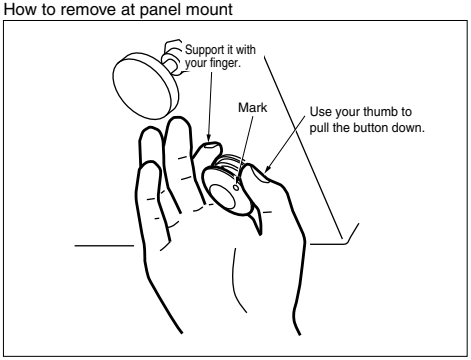


Series VM
Specific Product Precautions 3

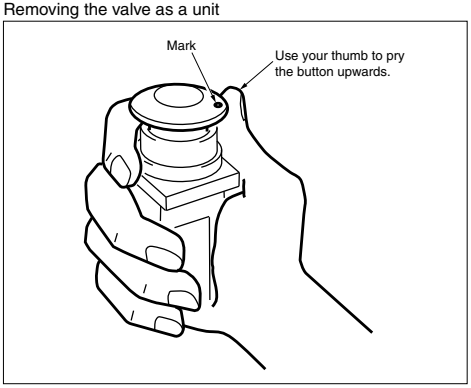
Be sure to read before handling.
Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

How to remove a mushroom button

How to remove at panel mount



Removing the valve as a unit



Replacement parts

1. Use the part numbers listed below to order individual mushroom head or flat head buttons.

Color	Mushroom button	Extended button
Red	3402186R	3402187R
Black	3402186B	3402187B
Green	3402186G	3402187G
Yellow	3402186Y	3402187Y

Color	Push button (Flush)
Red	3402188R
Black	3402188B
Green	3402188G
Yellow	3402188Y

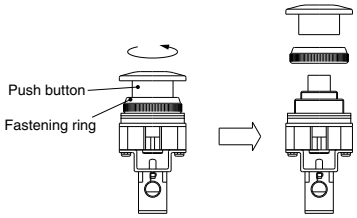
2. To order single fastening ring, use the part number below.
Fastening ring: 3402184

3. To order a single push button for series VM1000 and a single cover use the part number below.

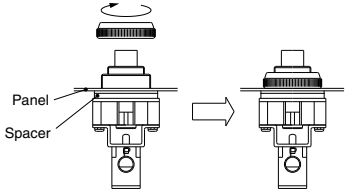
Color	Push button	Cover for push button
Red	3410701-R	3410703 (White only)
Black	3410701-B	
Green	3410701-G	

Series VM-X219, VZM-X219, VFM-X219 How to Mount Panel

[Task 1] Removal of the push button and fastening ring
Remove them from the body turning them counterclockwise in the order of the pushbutton and fastening ring.



[Task 2] Mounting the valve to the panel
Insert the valve to the panel and fix it with a fastening ring. Remove three spacers attached to the valve depending on the panel thickness.



[Task 3] Mouting the push button
Tighten the push button clockwise by hand and further tighten it until load is applied.

Note) When the push button is not tightened enough, the valve may not output correctly after operating the push button. In other cases, the valve outputs temporally, but when it is in the holding state, the valve may stop outputting. In this situation, please tighten the push button again.